REPORT OF THE NATIONAL RESEARCH COUNCIL

FOR

THE YEAR

JULY 1, 1942–JUNE 30, 1943

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REPORT OF THE NATIONAL RESEARCH COUNCIL

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JULY 1, 1942–JUNE 30, 1943

ORGANIZED IN 1916 AT THE REQUEST OF THE PRESIDENT OF THE UNITED STATES BY THE NATIONAL ACADEMY OF SCIENCES UNDER ITS CONGRESSIONAL CHARTER

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REPORT OF THE NATIONAL RESEARCH COUNCIL

For the year July 1, 1942, to June 30, 1943

(Prepared in the office of the chairman of the Council with the assistance of the chairmen of divisions of the Council)

The following report is presented to the National Academy of Sciences by the National Research Council upon activities of the Council during the fiscal year July 1, 1942, to June 30, 1943.

INTRODUCTION

During the year the activities of the National Research Council have continued on an increased scale and with greater diversity. External factors, described in the previous report of the Council, have continued to affect the operation of the several divisions in different ways so that some have been exceedingly active while others have been largely replaced insofar as war work is concerned. The situation in the field of biology and agriculture is, on the whole unchanged, but in spite of the failure of the Government to provide machinery to make funds for emergency research in this field available, and to utilize fully the services of biologists who are anxious to be active in the war effort, work of great utility and importance in this combined field has grown, as described below in the report of the division of biology and agriculture.

The procedures followed in the administration of Government contracts (see report for 1941–42) have worked well and have almost completely removed the difficulties under which the Council was laboring in this respect. This has been greatly facilitated by the creation of the office of business manager, which was filled in August 1942 by the appointment of Mr. George D. Meid.

On the other hand, the Council suffered a severe loss in the death of Dr. Albert L. Barrows, who since 1920 had been successively its assistant secretary and executive secretary. Dr. Barrows' familiarity with the details of the Council's affairs and his extraordinary devotion to its interests rendered his replacement very difficult and all the more so because of the simultaneous resignation of Dr. Robert B. Jacobs, who for 2 years had filled the position of assistant secretary most efficiently.

After Dr. Barrows' death Dr. W. H. Kenerson, of the division of engineering, agreed to serve as acting executive secretary and later was regularly appointed by the executive board to that office.

GENERAL ACTIVITIES

Fellowships.—The number of applicants for fellowships showed a marked decrease owing to the entrance of many young men into the military service. Awards have, however, been made only to such applicants as could meet the normal requirements, and standards have not been lowered.

Six applications for fellowships in the medical sciences were received, all of which were declined. Five of the six applications for fellowships in the field of filtrable viruses were approved; one of the awards was not accepted. No applications were received in the fied of orthopedic surgery. From the 12 applications presented for Welch fellowships in internal medicine 2 appointments were made for the 3-year period 1943–46. Three requests for renewal of fellowships were granted, making a total of 9 active fellowships for the year 1943–44.

From 20 applications for fellowships in the natural sciences (including 1 for reappointment) 7 fellowships were awarded for 1943–44, one of which was later declined.

Scientific aids to learning.—This committee, while having undertaken no new projects during the year, continues in existence in order to consider reports of projects not completed, certain of which have been interrupted because of the preoccupation of their directors with war work.

Conference grants.—As in past years, the National Research Council has been able, through appropriations made by the Rockefeller Foundation, to sponsor conferences called for the consideration of important special problems or meetings of committees of the Council to promote research and to meet other special needs. During the year a total of $9,394.82 was spent for these meetings, as follows:

GENERAL

Ethnogeographic Board, for general expense.
Committee on utilization of scientific personnel, Washington, D. C., July 2, 1942.
Committee on applied mathematical statistics, Washington, D. C., January 14, 1943.

GEOLOGY AND GEOGRAPHY

Committee on tectonics, several conferences in connection with final drafting of tectonic map of the United States.
Committee on glacial map of North America, several conferences between the chairman and members of the committee.

BIOLOGY AND AGRICULTURE

Committee on animal nutrition, Chicago, Ill., November 30, 1942.
Conference on marine resources, Washington, D. C., February 15–16, 1943.
Committee on research on food resources of coastal waters, Washington D. C., May 28, 1943.
Committee on crop protection, conference on phytopathology, Columbus, Ohio, February 12–14, 1943.
Committee on wartime modification of curriculum in biology, Cincinnati, Ohio, January 23, 1943.
Conference on war organization of biology, Washington, D. C., August 2, 1942.
Committee on forestry, conferences of chairman, August 2, 1942, to February 3, 1943.
Committee on crop protection, Washington, D. C., and Baltimore, Md, October 12 and 14, 1942.
Subcommittee on increasing milk flow, Chicago, Ill., May 3, 1943.

ANTHROPOLOGY AND PSYCHOLOGY

Emergency committee in psychology, meetings in New York and Washington, July 24–25, September 1–2, November 13–14, 1942, and January 8–9 and March 26–27, 1943.
Committee on problems of neurotic behavior (subcommittee on personality inventory), Washington, D. C., July 25, 1942.
Office of psychological personnel, travel.
Committee on classification of military personnel advisory to the Adjutant General's office, Washington, D. C., September 21, 1942.

Committee on African anthropology, preparation of personnel lists; meeting in Washington, D. C., October 24, 1942.
Committee on anthropology of Oceania, Washington, D. C., December 4, 1942.
Subcommittee on services of women psychologists in the war, travel of chairman.
Committee on child development, Washington, D. C., March 20, 1943.
Committee on African anthropology, Washington, D. C., March 24, 1943.
Intersociety convention of psychologists, New York City, May 29–31, 1943.

Representatives on special occasions.—In response to invitations the National Research Council has been represented during the year as follows at scientific meetings and special academic commemorative occasions:

Inauguration of Harry Noble Wright as president of the College of the City of New York, September 30, 1942: Marston T. Bogert, professor of chemistry, emeritus, Columbia University.
Forty-seventh annual meeting of the American Academy of Political and Social Science, Philadelphia, Pa., April 9–10, 1943: W. H. Kenerson, professor of mechanical engineering, emeritus, Brown University; executive secretary, National Research Council; and C. E. McClung, professor of zoology, emeritus, University of Pennsylvania.
Centenary convocation of Villanova College, Villanova, Pa., May 3, 1943: Jacob R. Schramm, professor of botany and director of the Morris arboretum, University of Pennsylvania.

Advisory committee on scientific publications.—The advisory committee on scientific publications has continued to function along lines described in the annual report for 1941–42. Reference committees in the various fields, with the number of referees, are as follows: Aeronautics, 2; applied mechanics, 7; mathematics, 1; medicine, 10; metallurgy, 1; physics and chemistry, 9; synthetic rubber, 1. Editors of 237 journals covering their respective fields were notified of the service to be rendered by the referees, and cooperation has been general.

One of the chief activities of the committee has been in connection with actions taken by the Technical Data License Division of the Bureau of Economic Warfare, restricting the export of certain journals or deleting articles from journals which are intended for export. The committee has taken the position that once an article is published in this country it becomes virtually available to the enemy and restriction of export is ineffective. Recently responsibility for decisions concerning export as well as publication in this country has been turned over to the Office of Censorship. Shortly after this transfer was made the chairman of the committee arranged a conference with the director of the Office of Censorship, with the result that the director agreed to accept as final the judgment of the Council's referees concerning the exportability of any scientific article which might be questioned under the Code of Wartime Practices. A procedure of interchange between the referees, the editors of scientific journals, and the Office of Censorship was worked out, and the editors were invited to avail themselves of the services of the committee in the examination of doubtful articles. By this procedure publication of unrestricted material is expedited and a smoothly working relationship is established between the editors and the Office of Censorship.

Office of scientific personnel.—The office of scientific personnel, established in May 1941, continued its work under contract with the Office of Scientific Research and Development. On September 15, 1942, when Dr. Joseph C. Morris was forced to return to his duties at

Tulane University, Dean Homer L. Dodge, of the University of Oklahoma, succeeded him as director.

As its primary function the office was successful in finding a large number of men competent in critical fields for employment by war agencies, in spite of the extreme manpower shortage in such fields.

Personnel assistance has been rendered to a large number of agencies. First attention was given to the needs of the Office of Scientific Research and Development, especially to the divisions of the National Defense Research Committee and the directors of their projects. Complete lists of available men were furnished and vigorous efforts were continually made to fill specific vacancies. Special assistance was also given to many departments of the armed services, including in the War Department, the Ballistics Research Laboratory at Aberdeen, the Office of Army Ordnance, the Officer Procurement Service, the Operations Analysis Division, and the Pine Bluff Arsenal; and in the Navy Department, the Bureau of Naval Personnel, the Research Division of the Bureau of Ships, the David Taylor Model Basin, the Naval Aircraft Factory at Philadelphia, the Naval Proving Ground at Dahlgren, and the Office of Inspector of Naval Material at New York.

Other Government agencies assisted include the Immigration and Naturalization Service, the Joint Meteorological Recruiting Board, the Langley Memorial Aeronautical Laboratory, the National Bureau of Standards, the Division of Cultural Relations of the Department of State, the Tennessee Valley Authority, the United States Office of Education, and the War Manpower Commission.

The office has also helped meet urgent personnel needs of many industries engaged in vitally important war research and of a large number of educational institutions charged with large war-training programs in critical technical fields. The number of companies and institutions so assisted is too great to be listed here.

During the period reviewed by this report emphasis was perforce transferred from the above activities, designed to expand the research personnel engaged in the national war effort, to other activities intended to conserve such personnel in positions of maximum effectiveness. The greatest threat was the possibility of unwise drafting of men of military age as manpower margins became narrow and as political pressure to place dependency ahead of occupational considerations increased. The office, through the interest of Dr. E. C. Elliott and Gen. Lewis B. Hershey, was primarily instrumental in the establishment of the National Committee on Physicists and Mathematicians as set forth in Activity and Occupation Bulletin No. 35 of the Selective Service System. This is the most effective procedure that has been devised for placing adequate information and advice before local boards. Committees have also been provided for chemistry and engineering.

Prior to establishment of this procedure the office assisted employers and officials of the Selective Service System in correcting erroneous decisions, in perfecting procedures, and in many other ways. This work and the establishment of the national committee procedure have focused attention on the importance of the research worker in the war.

The office has assisted the national roster and other agencies both in and out of the Government to gather and evaluate statistics on the supply of and need for men in certain critical fields. These data have,

by their mere availability, materially affected Government manpower policies and regulations in a way favorable to the war effort. They have also, together with direct urging by the office, influenced universities and colleges to supplement manpower in critical fields by recruiting and training emergency teachers from unpressed fields. In physics and mathematics alone the numbers involved amount to many hundreds.

By virtue of the office's close contacts with universities and colleges it has been able to arrange authoritative assistance to the Army and Navy in the preparation of their advanced training programs. This has included construction of curricula and outlining of course material in certain critical subjects. Subsequently many problems of institutions suddenly assimilating large units for training have been given attention. The office's contribution to these programs has been designed to increase their efficiency, thereby saving teaching manpower and helping to turn out men capable of operating and maintaining technical instrumentalities of warfare. One action of the office resulted in the establishment of cooperation between the War Production Board and several instrument manufacturers in expediting the production of urgently needed demonstration and laboratory equipment. The office continues to advise the War and Navy Departments regarding curricula, course contents, and the selection of institutions for special training programs.

The office has freely turned its hand to problems of scientific and technical personnel in connection with the war effort regardless of their nature, their point of origin, or the fields of knowledge involved. Its flexibility in this respect and its capacity to give individual attention are not equaled elsewhere in the whole war program. It is expected that these qualifications of the office will be increasingly important.

Cooperation with the National Bureau of Standards.—During the year the National Research Council has continued to serve the National Bureau of Standards in the administration of funds which have been contributed to the Bureau by industry and other nongovernmental agencies for the support of investigations conducted at the Bureau. Projects supported in this way during the past year are as follows: Acoustic properties of building materials, thermal properties of liquids, fire resistance of materials, thermal investigations, ignition research, the construction of high precision standards, and investigations on stainless steel sheets. The total amount expended this year by the Research Council on these projects was $6,716.44.

Bibliographic service to Central and South America.—In cooperation with the library of the United States Department of Agriculture and under the sponsorship of the Coordinator of Inter-American Affairs, a microfilm service is now being offered to the republics of Central and South America. Microfilm copies of any scientific article available in Washington will be furnished without charge to scientific workers in the other American republics, and in addition it is proposed to distribute a substantial number of hand readers for use with the microfilm where other readers are not available. The demands for this service are increasing as its availability becomes known.

Committee on applied mathematical statistics.—The committee on applied mathematical statistics was organized late in 1942 in order that the Council might be prepared to furnish statistical advice and informa-

tion upon problems concerned with personnel, organization, research, and production. The services which it will render include consultation, assistance in the organization and direction of special research projects, and the preparation of necessary manuals on statistical techniques and their application. Subcommittees have been appointed in the following fields; biology, chemistry, economics, engineering, mathematical statistics, medicine, physics, and psychology. Upon request the Secretary of War, the Secretary of the Navy, the Chairman of the War Production Board, and the Administrator of the Office of Price Administration have appointed liaison officers from their respective groups.

Inter-American engineering cooperation.—At the request of the joint committee on Inter-American engineering cooperation, made up of members of five of the national engineering societies, and under the sponsorship of the Inter-American Development Commission, steps are being taken to bring about a wider exchange of technical literature between the engineers of the Western Hemisphere.

JOINT ACTIVITIES

Ethnogeographic Board.—The Ethnogeographic Board was established in June 1942, at a time when the needs of the present war called for the immediate canalization of every type of scientific knowledge into the service of our fighting forces suddenly engaged on a world-wide front. As a part of their effort to assist in this task the American Council of Learned Societies, the Social Science Research Council, the National Research Council, and the Smithsonian Institution established the Ethnogeographic Board in Washington to act as a clearing house between the academic, scientific, and humanistic disciplines with which it was concerned and the organized governmental war effort. At the same time the sponsoring institutions visualized this new instrument as perhaps having equal potential value in organizing scientific materials concerning those complex human and geographic adjustments that will be essential in the establishment of any just and workable peace.

Grants of $20,000 each from the Carnegie Corporation and the Rockefeller Foundation were made available for the use of the board. The types of service rendered have been almost as varied as are the exotic social and environmental regions which are occupied or are in process of occupation by our fighting forces.

Upon request of Army and Navy officials some 25 confidential reports, including charts and photographs, relating to various strategic areas have been prepared and submitted. These include geologic, medical, socio-economic, and other data. They were written by scientists whose experience best fitted them to provide the desired information. In addition the board has furnished information concerning facts or individuals to fill immediate needs. Confidential materials made available through the board include mimeographed reports, regional bibliographies, foreign publications, rare maps and charts, gazetteers, data on tropical diseases, etc. These were secured through nongovernmental sources and were made available to the armed forces through the military liaison officers assigned.

The Army and Navy report that most satisfactory results were derived from the use of photographs and other data dealing with highly strategic areas furnished by a selected list of scholars who had

recently been in such areas. Some 4,000 copies of regional personnel lists and mimeographed strategic reports have been distributed through the agency of the board. The Washington regional specialist file, now including 8,500 entries for all continental and island areas, has been widely used.

The 12 round-table dinner conferences held by the board and 30 in which it has participated have considered problems ranging from colonial policy to the transmission of trematode diseases. These conferences drew together the best authorities on such subjects irrespective of institution or agency. None of the activities of the board have duplicated those of any Government-supported agency, and each activity has been aimed at integrating the needs of the Government with the ethnogeographic resources of the country at large.

Joint committee on Latin-American studies.—During the year the joint committee has held four formal meetings, and each of its subcommittees, on research, publications, and personnel, has met once. The committee has likewise sponsored special conferences on the Handbook of Latin American Studies, and on the project for a study of archives in Latin America.

Two committee members resigned, Dr. W. Rex Crawford, to become cultural attaché in Rio de Janeiro, and Dr. George C. Vaillant, for a similar assignment in Lima. Dr. Robert A. Lambert, of the Rockefeller Foundation, and Dr. René d'Harnoncourt, of the Indian Arts and Crafts Board, United States Department of the Interior, were appointed to the committee.

Two issues of the committee's publication, Notes on Latin American Studies, appeared in 1943. Likewise, volume 7 of the Handbook of Latin American Studies was published and distributed. In the field of publication the committee put into effect a simple plan of exchange of journals with Latin America.

The committee considered 26 new projects during the year and continued to advise on many initiated the year before. The new projects were presented to the committee by various governmental agencies, councils, institutions, and individuals. At its last meeting of the year the committee felt that in the future it would be possible to devote its major efforts to planning and promoting Latin-American studies and forego its advisory functions.

AMERICAN GEOPHYSICAL UNION

The twenty-fourth annual meeting of the American Geophysical Union was held in the Hall of Government of George Washington University, Washington, D. C., on April 23 and 24, 1943. The program for the general sessions of the union and its 8 sections included 107 scientific papers and progress reports. These communications indicated the great diversity of the several geophysical fields and the activity and progress in each. The total attendance of members and guests, despite the urgent demands upon all because of the war, was in excess of that registered, namely 475.

Nine resolutions were adopted. These related to (1) precise surveys and maps, (2) essential geophysical observations for the duration of the war, (3) implementation of meteorology for war purposes, (4) establishment of more stations in oceanic areas and Antarctica in the interest of daily and long-range forecastings, (5) naval time-signal services, (6) adequate post-war program of seismological investiga-

tions, (7) practical post-war program in all branches of geophysics, (8) ways and means of providing employment for geophysicists released from the war effort during the period of transition from war to peace, and (9) thanks to George Washington University for facilities extended for the meeting.

The fifth award of the William Bowie medal to Oscar Edward Meinzer was made at the general assembly on April 24. Brief memorials on three of the members who had died in the year since the last meeting were read.

J. A. Fleming was reelected general secretary of the union for the years 1943–46; J. A. Duerksen was elected secretary of the section of geodesy for the same period; and Ernst Cloos, L. L. Nettleton, and M. K. Hubbert were elected president, vice president, and secretary, respectively, of the section of tectonophysics for 1943–46.

During the period July 1, 1942, to June 30, 1943, but one regional meeting was held, namely, the joint meeting of the section of hydrology with the western snow conference at Corvallis, Oreg., on June 16, 1943. This was the fifteenth regional meeting so far held under the auspices of the union. Thirteen papers were presented and discussed at length. Because of the limitations of transportation due to the war emergency two other regional meetings that had been proposed were postponed.

The transactions of 1942 (parts I and II, with a total of 741 pages) for the regional meetings at Dallas in December 1941, and Pasadena in January 1942, and for the twenty-third annual meeting at Washington, D. C., on April 3 and 4, 1942, were published and distributed in August and November 1942.

The continuation of the annual Bibliography of Hydrology, United States of America, was postponed in view of the lack of time for preparation of the manuscript. It is expected that the series will be continued at the earliest possible time and that the next volume will include the years 1941, 1942, and 1943.

The total membership of the union on June 30, 1943, was over 2,000, thus showing a gain of over 400 since June 30, 1942.

Despite interference during the year because of the war, it has been possible, with our colleagues in the United Nations, to preserve a considerable part of the functioning of the International Union of Geodesy and Geophysics and thus insure its continuance and the certainty of taking up its important work promptly upon the termination of the war. The contribution of dues from the United States to the International Union for the calendar year 1941 has been received making the balance available at the close of the fiscal year $10,352.92. So far as the limitations of mailing facilities permitted, copies of the transactions of the union have been forwarded without charge to our colleagues abroad. Sufficient copies of the transactions have been kept in stock so that they may be forwarded without charge, as heretofore, to persons and organizations interested in countries to which mailing facilities are not now available.

The American Geophysical Union has made every endeavor in the past year to increase the coordination and collaboration of interests, especially with the geophysicists of the Western Hemisphere, and to maintain a considerable part of the continuity of the functions of the International Union of Geodesy and Geophysics, as above stated, thus protecting for the future those international relations so essential to geophysical research.

LIBRARY

During the fall and winter months the library staff was engaged in assisting the committee on war use of research facilities in a survey of the available research facilities of educational institutions and industrial laboratories of this country. The information obtained was compiled by a number of persons, including the library staff, and was issued in mimeographed form as Available Research Facilities. There are two parts with supplements: Part I, Universities and Colleges (issued October 8, 1942); Supplement to Part I (December 21, 1942); Part II, Industrial Laboratories (November 1, 1942); Supplement to Part II (December 21, 1942). An index to the equipment listed in Part I and Supplement to Part I, Universities and Colleges, appeared in February 1943. Distribution of the reports was restricted to the armed forces and war agencies as confidential documents. The library handled this distribution under the direction of the committee until March 1943, when the remaining copies of the reports were turned over to the War Production Board.

With the increased number of publications appearing in the Council's series a need was felt for a central office through which estimates might be obtained and contacts maintained with the printer. The library was designated by the publications committee to act in this capacity. Bibliographic aid was made available and other assistance given, as requested by the divisions or committees of the Council.

Ninety-one new books were purchased during the year, and a number of periodicals added to the list of those regularly received and circulated. Requests for more than 200 books were made to other libraries in Washington for use of Council personnel.

PUBLICATIONS

The publications of the Research Council during the year have been as follows:

BULLETINS

Data on Chemicals for Ceramic Use. Based on the report of the committee on chemical data for ceramists. Baltimore: Lord Baltimore Press, Bulletin No. 107, June 1943. 94 pages ($2.50).

REPRINT AND CIRCULAR SERIES

The Nation's Protein Supply. Report of the Food and Nutrition Board. Prepared by the committee on milk, meat, and legumes. Reprint and Circular Series No. 114. August 1942. 10 pages.

Recommended Dietary Allowances. Food and Nutrition Board. Reprint and Circular Series No. 115. January 1943. 6 pages.

The Effects of Storage of Grains on their Nutritive Value. Seventh report of the committee on animal nutrition. Reprint and Circular Series No. 116. March 1943. 14 pages (25 cents).

Is Animal Protein an Essential Constituent of Swine and Poultry Rations? Ninth report of the committee on animal nutrition. Reprint and Circular Series No. 117. May 1943. 20 pages.

SPECIAL PUBLICATIONS

Ore Deposits as Related to Structural Features. Princeton: Princeton University Press. October 1942. 280 pages ($3).

Heat Transmission. Second edition. New York: McGraw-Hill Book Co. July 1942. 459 pages ($4.50).

A Bibliography of Aviation Medicine. Prepared for the committee on aviation medicine, division of medical sciences. Springfield: Charles C. Thomas. 1942. 237 pages ($4).

Manual of Dermatology. Issued under the auspices of the committee on medicine, division of medical sciences. Philadelphia: W. B. Saunders Co., 1942. 421 pages ($2).

Military Surgical Manuals. Prepared for the committee on surgery, division of medical sciences. Philadelphia: W. B. Saunders Co.:

No. 2. Ophthalmology and Otolaryngology, 1942. 331 pages ($4).
No. 3. Abdominal and Genito-urinary Injuries. 1942. 243 pages ($3).
No. 4. Orthopedic Subjects. 1942. 306 pages ($3).
No. 5. Burns, Shock, Wound Healing, and Vascular Injuries. 1943. 272 pages ($2.50).
No. 6. Neurosurgery and Thoracic Surgery. 1943. 310 pages ($2.50).

The Sex Cycle in Women. The relation between ovarian function and psychodynamic processes. Published under the sponsorship of the Committee on Problems of Neurotic Behavior, 1942. 307 pages ($3.50).

PUBLICATIONS OF THE HIGHWAY RESEARCH BOARD

Highway Research Abstracts. Nos. 92–101, July 1942 and June 1943. Mimeographed.

Proceedings of the twenty-first annual meeting, 1941. Issued August 1942.

Wartime Road Problems. An occasional series of leaflets. Nos. 1–5, July 1942 to February 1943.

PUBLICATIONS OF THE AMERICAN GEOPHYSICAL UNION

Transactions of the American Geophysical Union. Part I, Report and Papers, Joint Regional Meetings, Section of Hydrology. (A) Dallas, Tex., December 30, 1941; (B) Pasadena, Calif., January 16–17, 1942. Published August 1942. Part II. Twenty-third Annual Meeting, April 3 and 4, 1942, Washington, D. C. Published November 1942.

PERIODICALS

Mathematical Tables and Aids to Computation. A quarterly journal edited on behalf of the committee on mathematical tables and aids to computation, division of physical sciences. Subscription price $3 a year, payable to the division, volume 1, No. 1, January 1943.

MISCELLANEOUS PUBLICATIONS

Organization and Members, 1942–43. December 1942. 76 pages. Planographed.

Annual Report, National Research Council, 1941–42. 104 pages. Separate reprint from the Annual Report of the National Academy of Sciences, 1941–42.

RECEIPTS FROM SALES

Receipts from the sale of publications issued by the Research Council in the Bulletin Series and in the Reprint and Circular Series from June 10, 1942, to June 9, 1943, are as follows:

Bulletin 103: Bibliography of Orthogonal Polynomials	$31.63
Bulletin 104: Industrial Research Laboratories of the United States	769.30
Bulletin 105: Guide to Tables in the Theory of Numbers	69.50
Bulletin 106: Handbook of Scientific and Technical Societies and Institutions of the United States and Canada	3,117.60
Physics publications	574.93
Animal nutrition publications	123.80
All other general publications of the Research Council	146.84
Total	4,833.60

SUMMARY OF FINANCIAL OPERATIONS

General.—The total expenditures of the National Research Council during the fiscal year ended June 30, 1943, for current purposes amounted to $1,272,054.09. This amount is exclusive of purchases

of securities, transfers of funds within the Council's accounts, repayments of advances to the National Academy of Sciences, and refunds which were in the nature of expenditure reductions. The total net expenditures for the year under review were approximately 17 percent greater than in the previous year.

An analysis of the total current expenditures by the major types of activities supported provides a measure for interpretation and an indication of the magnitude of operations in the various categories. The expenditures of the Research Council may be classified for this purpose as follows: (1) Administrative and general; (2) specific projects, including those undertaken for and supported by Government agencies, and those whose financial support is provided by nongovernmental agencies; (3) fellowships administered by boards of the Research Council and supported by private philanthropy; and (4) agency funds which are handled by the Council as the fiscal agent of the various controlling bodies.

The report of the treasurer (p. 39) contains detailed statements on receipts and disbursements of the National Research Council.

Classification of expenditures by purposes

Purpose	1941–42		1942–43	
	Amount	Percent	Amount	Percent
Administration and general	$132,915.07	12.3	$137,382.89	10.8
Specific projects:				
Government	568,813.70	52.4	839,348.30	66.0
Non-Government	260,421.78	23.9	211,290.32	16.6
Fellowships	95,293.93	8.8	63,626.69	5.0
Agency funds	27,686.96	2.6	20,405.88	1.6
Total	1,085,131.44	100.0	1,272,054.08	100.0

Administrative and general costs.—Funds from which the Research Council's administrative and overhead costs are paid are provided to a certain extent from income on endowment funds. Other sources of financial support during 1942–43 included allotments of portions of grants by the Rockefeller Foundation and the Carnegie Corporation. As generous and timely as those contributions from private philanthropy have been, the endowment-fund income and the private grants for administrative purposes have not been adequate to cover the administrative and general costs of the Council during the past several years. The following factors have accounted for this situation: (1) The upward trend of salaries and prices in general, which has increased the costs of normal operations, and (2) the need for a larger administrative and clerical staff to service the greatly increased volume of project work resulting from requests of the Government. During the year under review the Academy was able to charge to the Government that portion of the Research Council's administrative and overhead expenses which was attributable to research projects undertaken for the Government. Only those costs which by their nature could not be charged to individual specific projects were included in the general charge to the Government. Thus for the first time in recent experience the Academy was in position to recover its total actual costs of conducting projects for and rendering services to

agencies of the Government. Thus, also, the Research Council was able to balance its administrative budget without recourse to the use of large portions of emergency funds which were intended principally for other than administrative purposes. It is hoped that the philosophy underlying the present formula by which the Government bears its fair and equitable share of the administrative and overhead costs of the Research Council in connection with projects carried out for the Government will become a permanent feature of the Academy's relationship with the Government.

Government projects.—The data in the above table indicate the extent to which the attention and energies of the Research Council have been directed to work for agencies and departments of the Government during the year under review. Approximately two-thirds of the total net expenditures of the Council for current purposes were on account of Government projects. This amount constituted 80 percent of the total expenditures for project work during the year, exclusive of expenditures for fellowships. At the close of the fiscal year 1942–43 the trend was toward even greater concentration of effort on projects undertaken for the Government. The nature of these projects and their relation to the war effort and to rehabilitation problems are contained in the reports of the division chairmen elsewhere in this report.

Non-Government projects.—During the fiscal year under review the expenditures for specific projects supported by private philanthropy were less than in the previous year by approximately 7 percent. This reduction reflects the greater concentration of the Council's attention to wartime studies and investigations conducted for the Government. The largest individual projects privately supported were in the field of medicine—research in problems of sex and research in endocrinology. In the general field of biology and agriculture the privately supported projects increased in number and in volume of expenditures. The expansion of activities in this vitally important area was limited only by lack of financial support.

Fellowships.—Expenditures during 1942–43 on account of fellowships administered by the Research Council were as follows:

In the medical sciences, including those relating to the filtrable viruses and orthopedic surgery	$23, 187. 53
In the natural sciences	39, 755. 83
Special fellowship on the application of the electron microscope to biological research	683. 33
Total	63, 626. 69

Agency funds.—In the fiscal year under review the Research Council disbursed funds as fiscal agent as follows:

Washington Biophysical Institute	$904. 15
Society for Research in Child Development	3, 223. 23
Annual Tables of Constants and Numerical Data	9, 562. 06
National Bureau of Standards	6, 716. 44
Total	20, 405. 88

The Research Council has no responsibility for development and conduct of the technical programs of the agencies indicated. As fiscal agent the Council undertakes only to receive and disburse the funds in accordance with the wishes of the controlling bodies.

OFFICERS OF THE NATIONAL RESEARCH COUNCIL, 1943-44

The officers, members, and committees of the Research Council for the current year, 1942–43, are given in an appendix to this report (pp. 56–87).

The officers of the Research Council for the ensuing year, July 1, 1943, to June 30, 1944, are as follows:

GENERAL OFFICERS

Chairman: Ross G. Harrison, Sterling professor of biology and director of the Osborn Zoological Laboratory, emeritus, Yale University, New Haven, Conn.

Treasurer: Jerome C. Hunsaker, treasurer, National Academy of Sciences; professor in charge of the department of aeronautical engineering, Massachusetts Institute of Technology, Cambridge, Mass.

Executive secretary: William H. Kenerson, professor of mechanical engineering, emeritus, Brown University; National Research Council, 2101 Constitution Avenue, Washington, D. C.

Business manager: George D. Meid, National Research Council.

Bursar: J. H. J. Yule, National Research Council.

Chief clerk: C. L. Wade, National Research Council.

OFFICERS OF DIVISIONS

Foreign relations: Chairman, W. B. Cannon, George Higginson professor of physiology, emeritus, Harvard Medical School; 20 Prescott Street, Cambridge, Mass.; vice chairman, Harlow Shapley, professor of astronony and director of the Harvard College Observatory, Harvard University, Cambridge, Mass.; secretary, William H. Kenerson.

Physical sciences: Chairman, Luther P. Eisenhart, professor of mathematics and dean of the graduate school, Princeton University, Princeton, N. J.; vice chairman, Henry A. Barton, director, American Institute of Physics, 175 Fifth Avenue, New York, N. Y.

Engineering and industrial research: Chairman, W. F. Durand, professor of mechanical engineering, emeritus, Stanford University, Stanford University, Calif.; vice chairman, Howard A. Poillon, president, Research Corporation, 405 Lexington Avenue, New York, N. Y.; executive secretary, W. H. Kenerson.

Chemistry and chemical technology: Chairman, W. Mansfield Clark, professor of physiological chemistry, school of medicine, Johns Hopkins University, Baltimore, Md.; vice chairman, Harris M. Chadwell, head of the department of chemistry and chemical engineering, Tufts College, Medford, Mass.

Geology and geography: Chairman, William W. Rubey, principal geologist, United States Geological Survey, Washington, D. C.; vice chairman: Otto E. Guthe, principal administrative assistant, Office of the Geographer, Department of State, Washington, D. C.

Medical sciences: Chairman, Lewis H. Weed, professor of anatomy and director of the school of medicine, Johns Hopkins University, Baltimore, Md.; first vice chairman: Robert F. Loeb, Lambert professor of medicine, College of Physicians and Surgeons, Columbia University, New York, N. Y.; second vice chairman: John F. Fulton, Sterling professor of physiology, school of medicine, Yale University, New Haven, Conn.

Biology and agriculture: Chairman, Robert F. Griggs, executive officer, department of botany, and chairman, division of natural sciences, George Washington University, Washington, D. C.; vice chairman, L. A. Maynard, director, school of nutrition, and professor of animal nutrition, Cornell University, Ithaca, N. Y.

Anthropology and psychology: Chairman, Leonard Carmichael, president, Tufts College, Medford, Mass.; vice chairman, Ralph Linton, professor of anthropology, Columbia University, New York, N. Y.

DIVISION OF FOREIGN RELATIONS

W. B. Cannon, chairman; Harlow Shapley, vice chairman

International cooperation in scientific endeavor has been during the year 1942–43 much limited by the war. In 1813, when France and England were fighting each other, Sir Humphrey Davy visited Paris,

was awarded a gold medal by the Académie des Sciences, and elected a corresponding member. Such amenities have long since vanished.

In a conference held on August 7, 1942, between A. C. Egerton, one of the secretaries of the Royal Society of London, and the chairman of the division, it was agreed that after the war opportune cooperative undertakings with learned societies of previously hostile nations might be a better way of restoring mutual friendship and respect than an attempt now, on our part alone, to fix a definite policy for collaboration.

Such activities as have been carried on by the division may be classified into three categories: Activities of (1) divisions of the Council, (2) international organizations, and (3) individual members of the division of foreign relations.

Reports from divisions.—The division of geology and geography has been cooperating with the Geological Society of America in preparing a geologic map of South America and also with Latin-American geographers in translating into Spanish textbooks on the methods of map making.

The division of biology and agriculture has seen the realization of a plan which it has long advocated, the establishment of an Inter-American agricultural center, now supported by the Coordinator of Inter-American Affairs. An Inter-American conference on agriculture, held in Mexico City in July 1942, may result, it is hoped, in greater cooperation between agriculturists in the American republics.

A project, referred to elsewhere, has been started to provide copies in microfilm of scientific literature available in this country to scientists in the other American republics.

Reports from international organizations.—The functions of the International Union of Geodesy and Geophysics have been to a considerable degree preserved by activities of the officers of the union in England and the United States. Especially has this been true of official representatives of the Associations of Seismology and of Terrestrial Magnetism and Electricity, the Association of Geodesy, the International Commission on Snow, and the Associations of Meteorology and of Oceanography. Thus are insured the continuance of the union and the certainty of prompt resumption of its important work after the war ends. The American Geophysical Union has striven to increase the coordination of international interests, notably with geophysicists of the Western Hemisphere. A prudent action of the American Geophysical Union is a reservation of 200 to 300 copies of its annual Transactions for distribution to members of the International Union of Geodesy and Geophysics when return of peace will permit.

The activities of the International Union of Chemistry are carried on by national committees which are given special assignments. Thus an American committee has continued publication of Annual Tables of Constants and Numerical Data. Also the committees on analytical reactions and reagents, and on nomenclature in organic, biological, and inorganic chemistry have issued during the past year a number of reports.

The possibility has been considered of organizing a Western Hemisphere branch of the International Union, to be merged after the war with the existing Union. Such an organization would be advantageous in bringing together chemists of the American republics,

but unfortunately the war, which suggests the move, also prevents it by interfering with travel. On a small scale, however, students of chemistry are being welcomed and trained in the United States, and chemical studies of the natural products of Latin-American countries are in progress.

Most of the normal activities of the International Astronomical Union have been interrupted by the war, but in foreign lands a number of investigations have had support by using local contributions for local needs. With financial aid from the National Research Council the American Astronomical Society has distributed to astronomers in Sweden, Finland, Great Britain, the Union of Soviet Socialist Republics, and Switzerland information regarding advances in a monthly news letter. Further distribution through embassies and by foreign astronomers has brought favorable comment from Australia, Argentina, Mexico, Turkey, and other countries. Continuance of this valuable service is important.

Since the proceedings of the tenth annual session of the International Commission on Illumination (1939) included many valuable contributions to knowledge of lighting development and practice that were not likely to be published because of the war, the United States National Committee has put out an unofficial record of the reports and papers. The volume, 350 pages, is being distributed to individuals and organizations concerned with its interests.

The United States National Committee on International Cooperation in Industrial Standardization has maintained its activities in annual meetings. And the American Standards Association, which cooperated with the international body until the war began, has exchanged data with national standardizing agencies of eleven different countries scattered in all the continents. An Inter-American program is stressing especially contacts with standardizing bodies in Latin America, where need for standardization of manufactured products, parts of machinery, etc., is being recognized and where opportunity for collaboration is auspicious.

The National Research Council has joined with the Social Science Research Council and the American Council of Learned Societies in promoting Latin American studies in the United States in the fields of interest represented by the sponsoring Councils (p. 7).

Individual activites in the division.—Dr. Harlow Shapley was instrumental in aiding in the establishment of a National Astrophysical Observatory at Tonanzintla in the State of Puebla, Mexico. The seismograph in the observatory was originally obtained by the University of Vermont through a grant-in-aid from the National Research Council. A number of American scientists participated in the dedicatory ceremonies.

The chairman of the division has been consulted on three occasions by the Division of Cultural Relations of the Department of State on matters concerned with contacts with Latin-American countries. He has taken steps, which promise to be effective, toward transmitting to Chinese military authorities information important for the welfare of wounded soldiers and civilians. Also he has led in preparing a statement pointing out the common interests of scientists of the Western Hemisphere and indicating the advantages which would accrue from close and generous collaboration. The statement has been translated and published in Spanish and Portuguese.

DIVISION OF EDUCATIONAL RELATIONS

WILLIAM CHARLES WHITE, chairman

The work of the committee on problems of deafness has been carried on under difficulties during the past year. The death of Dr. Rudolf Pintner, chairman of the subcommittee on construction and installation of intelligence and achievement tests, and the entrance of Mr. Richard G. Brill, a member of the committee, into the Navy upset all progress in this field of study. The death of Dr. Pintner also made necessary a change in the subcommittee on evaluation of individual hearing aids in public schools for the hearing.

Dr. Arthur I. Gates, of Teachers College, Columbia University, took over the chairmanship of the latter subcommittee, and this investigation is being carefully and steadily pursued with selective groups of children in the public schools of New York City. Individual hearing aids of excellent quality have been obtained and kept in first-class condition by frequent examination and repair. A control group, carefully selected for comparison with the pupils using these aids, has been set up. Funds for this project were provided by the Council's committee on scientific aids to learning.

The subcommittee on intelligence and achievement surveys of the deaf, of which Prof. Irving S. Fusfeld, of Gallaudet College, is chairman, has been able to obtain considerable material because of the fact that Prof. Fusfeld has been engaged in two surveys of schools for the deaf, one situated in Frederick, Md., and the other in Vancouver, Wash.

The subcommittee on the effect of group hearing aids in schools for the deaf, headed by Dr. Harvey Fletcher, of the Bell Telephone Laboratories, has been obliged to minimize its work because of the demands of the war upon the chairman and the other members of the subcommittee. Funds for the work of this committee were also furnished by the committee on scientific aids to learning, and it has been agreed by the latter committee that the balance of funds not yet used may be made available for the study later on. Some progress by this group has been made through the setting up of a program in the Clarke School for the Deaf at Northampton, Mass.

The chairman of the subcommittee on screening tests, Dr. T. Ernest Newland, entered the service of the Navy and was succeeded by Dr. Harold Westlake, of the Department of Special Education of the State of Pennsylvania. The subcommittee is studying the results of the Pennsylvania plan of instructing school nurses in the use of audiometers and placing the testing of hearing of school children under the general control of county superintendents, obtaining first rough screening, which is to be followed up by more careful individual examination. This subcommittee is also studying work in other States such as Oregon, where screening plans for finding deafness among school children have been carried on. A report should be submitted by this committee during the coming fiscal year.

At a meeting of the division held during the year 1942–43 consideration was given to the function of a division of educational relations in the organization of the National Research Council, with the result that the division recommended to the executive board that it be discontinued as of June 30, 1943, and that the functions of the

Council in relation to educational problems be carried on by committees to be appointed as occasion arises, functioning either through the executive board or through the appropriate division of science and technology. This recommendation was approved by the board, and on June 30 the division was discontinued and the committee on problems of deafness and its subcommittees placed directly under the jurisdiction of the executive board.

DIVISION OF PHYSICAL SCIENCES

LUTHER P. EISENHART, chairman; HENRY A. BARTON, vice chairman

Physicists and mathematicians have been in great demand in connection with the war effort. and as a result fundamental research in these fields with which the division is normally concerned has been replaced by research having a direct bearing on war problems. Several projects of a confidential nature, undertaken at the request of the National Defense Research Committee, have been either completed during the year or have been transferred to the National Defense Research Committee.

Committee on mathematical tables and aids to computation.—This committee, with its several subcommittees, all under the direction of Prof. Raymond C. Archibald, of Brown University, prepared an extensive program for the preparation of mathematical tables and other aids to computation. It was found necessary, however, to curtail the activities of the committee because of the preoccupation of mathematical statisticians with problems of the Mathematical Panel of the National Defense Research Committee and services to the armed forces. There is already in existence a considerable amount of material which the committee felt should be made available for immediate distribution. Accordingly, a quarterly journal entitled "Mathematical Tables and Aids to Computation" was established by the committee, with Professor Archibald as editor. The Rockefeller Foundation has contributed $15,000 to be used as a revolving fund for the publication of the journal, and the editorial costs are met through the general maintenance funds of the division. Three issues of the quarterly have already appeared. In it are published statements concerning recent mathematical tables, errata in existing tables, lists of unpublished tables, and mechanical aids to computation. More than 200 subscriptions have been received, including a number from Great Britain. It has been clearly indicated that the journal is meeting a genuine need.

Publications—Physics of the Earth.—Sales of volumes VIII and IX in the Physics of the Earth series—Terrestrial Magnetism and Electricity, and Hydrology—continue at a gratifying rate. The edition of one of the earlier volumes of the series, Meteorology, is completely exhausted and the division has given consideration to its republication. In view of recent advances in this field, however, it has been decided to postpone publication until the material can be brought up to date.

Committee on training in applied mathematics.—It was reported last year that this joint committee of the divisions of physical sciences and of engineering and industrial research had recommended to the National Science Fund that it cooperate in the establishment of a series of fellowships at the post-doctoral level for training in applied

mathematics. Because of the small number of young men available for such training during the war period, the plan has been postponed but will probably be considered again when conditions become more favorable.

DIVISION OF ENGINEERING AND INDUSTRIAL RESEARCH

W. F. DURAND, chairman; HOWARD A. POILLON, vice chairman

The work of the advisory committee on metals and minerals and of the war metallurgy committee comprises by far the largest activity with which the division is now concerned. The work is largely financed by the War Production Board and the Office of Scientific Research and Development, contracts covering the work being of the order of a million and a half dollars per year. A large number of investigations and reports of a confidential nature, dealing with problems immediately applicable to the war effort, have been made.

An investigation leading to the improvement of aircraft brakes, undertaken at the request of the National Defense Research Committee, was completed on May 1, 1943. In order to carry out the project Mr. Herbert B. Lewis was borrowed from the Brown and Sharpe Manufacturing Co., Providence, R. I., as a field representative to make contacts with manufacturers and users of brakes for the purpose of studying specific problems and to advise in regard to materials, designs, and methods. He was able to develop a very gratifying spirit of cooperation among those concerned, and the effort which has extended over a period of about two years has resulted in very satisfactory progress. During this period the demands on aircraft brakes have been continually on the increase due to increasing weights and high landing speeds. By a suitable combination of new materials and improved forms of design these requirements have been successfully met, so that at the present time the capacity of the brake expressed in terms of heat absorption and dissipation per unit of area of the brake surfaces has been increased about threefold, and the present outlook is entirely reassuring as to the ability of the industry to meet successfully the rising trend of demand.

The special committee on concrete research was enlarged during the year in order to provide more adequate representation of all organizations concerned with concrete design and construction. A request was received from the United States Maritime Commission for all available information relating to six specific problems in the domain of concrete design and construction, especially as relating to concrete ships and barges. Upon authorization from the Office of Scientific Research and Development a field agent was employed to undertake the investigation. Mr. Emil Vidal first undertook the assignment and after his death Mr. A. G. Timms, of the Portland Cement Association, took up the investigation and submitted a report covering the activities of both investigators, which contained valuable information, much of it in carefully tabulated form. As a further item in this investigation the librarian of the United States Bureau of Reclamation at Denver prepared a bibliography of concrete design and construction, which was received with high appreciation by the Maritime Commission.

The Highway Research Board, while somewhat handicapped by

wartime conditions, has continued its constructive activities. Bulletins dealing with problems of immediate interest in the war effort have been issued in considerable number, and the meetings of the board, while necessarily held outside of Washington because of the limitations of hotel and meeting accommodations, have been exceptionally well attended.

The Industrial Research Institute has continued to operate as a quasi-independent organization within the framework of the division. Organized about 5 years ago largely through the interest of the former director of the division, Mr. Maurice Holland, it at present comprises some 55 members, representative for the most part of smaller companies interested in research. Its stated purpose is "to promote, through the cooperative efforts of its members, constant improvement of methods and more economical and effective management in industrial research."

The committee on heat transmission continues its activities, part of which is expressed in the issuance of a second edition of a standard textbook on the subject of heat transmission, prepared by Dr. W. H. McAdams.

The conference on electrical insulation, with headquarters in New York City, conducted among other projects a study of the problem of commutation of direct-current motors at high altitudes. Brushes ordinarily deteriorate rapidly when so used. This study was carried on in cooperation with the National Bureau of Standards, the Army Procurement at Wright Field, and the manufacturers of electric motors for aircraft service. As a result of these studies the difficulty has been satisfactorily overcome.

Another study had to do with the results of radio equipment in humid climates to which a promising solution was found.

A committee on quartermaster problems has recently been established at the request of the Office of the Quartermaster General of the Army for the investigation of technical problems arising in connection with the design and manufacture of special equipment for the Army. Funds for the work of the committee have been provided under contract with the Office of Scientific Research and Development. Dr. L. W. Bass, of the New England Industrial Research Foundation, has been made chairman of the committee, with Prof. W. George Parks, of Rhode Island State College, as technical adviser.

DIVISION OF CHEMISTRY AND CHEMICAL TECHNOLOGY

W. Mansfield Clark, chairman; Harris W. Chadwell, vice chairman

The work of the division of chemistry and chemical technology has become largely a matter of prompt attention to special requests, few of which could be referred to previously established committees. These problems, which have required the judgment of or investigation by special groups of chemists, have been considered by special conferences, committees, or panels. Such groups have changed according to occasion and hence have not been appointed on the customary yearly basis.

The close cooperation of the division with the division of medical sciences and the Committee on Medical Research of the Office of Scientific Research and Development, has been especially noteworthy.

At the request of the Committee on Medical Research the division organized a program of synthesis in a difficult, special field, beginning in the fall of 1941. That program has been continued during the last fiscal year with admirable cooperation and exchange of information between volunteers and chemists whose work is supported under contracts by the Office of Scientific Research and Development. The volunteers include chemists of academic and commercial institutions in the United States and Canada.

In May 1942 the Committee on Medical Research requested the division to investigate the properties of one of the principal antimalarial drugs. A committee of seven members was appointed, with cooperating representatives of Government agencies. The pharmacological studies were organized by Dr. E. K. Marshall, Jr., of Johns Hopkins University, and the clinical investigations by Dr. James A. Shannon, of New York University Medical College. The report on extensive chemical, pharmacological and clinical investigations was submitted to the Committee on Medical Research on October 3, 1942.

Several laboratories, organized with the advice of the malaria conference and operating under contract with the Office of Scientific Research and Development had been testing new drugs for antimalarial activity when it became evident that a systematic collection of the accumulated data was essential. Accordingly, the division organized on behalf of the Committee on Medical Research the survey of antimalarial drugs, the work of which is being conducted under contract between the Office of Scientific Research and Development and Johns Hopkins University, with Dr. Frederick Y. Wiselogle in charge.

Proposals for the synthesis of quinine having come to the attention of the chairman of the division, a special committee of experts was formed to advise the Committee on Medical Research regarding the matter.

A panel on the synthesis of antimalarial drugs, initially organized to stimulate volunteer efforts, has been used as an advisory body by the Committee on Medical Research and is now engaged in arranging for and supervising contractual work in a number of institutions. It is acting in close cooperation with the panel on the pharmacology of antimalarial drugs, the panel on clinical testing of antimalarial drugs, and the subcommittee on the coordination of malarial studies of the division of medical sciences.

There has also been created in the division a panel on the biochemistry of antimalarial drugs, having as its objective the uncovering of theoretical leads which may be put to direct practical tests.

The Army's manual TM–8–227, designed for use in laboratories of Army hospitals, was submitted to the Council for recommendations on revision. Dr. D. D. Van Slyke, of the Rockefeller Institute for Medical Research, with the aid of a committee, undertook the revision of the chemical sections. Dr. Van Slyke also seized the occasion to devise a new analytical method which will enable the surgeons in the field to determine with a pocket kit hemoglobin and plasma protein levels of blood with a precision adequate for guidance in the treatment of shock.

During the year representation on the Council through this division was granted to the American Society for X-ray and Electron Diffraction, the organization of which had been stimulated by the division's committee on the subject.

The committee on Annual Tables of Constants and Numerical Data reports excellent progress in carrying forward its essential work under exceptionally difficult circumstances. The financial support of this undertaking has been most gratifying.

The committee on chemical data for ceramists has completed its final report, which has been published as a Bulletin of the National Research Council.

The committee on the location of new and rare instruments has been given a year's trial. Any ambitious program would require an extensive and expensive survey, with considerable clerical help. By following a policy of simplicity and directness the chairman of the committee has rendered distinct aid at low cost and with minimum manpower.

The death of Dr. Harrison E. Howe has deprived the division of a devoted friend, and the committee on nonmetallic and nonmineral critical and strategic material of its chairman. This committee was set up jointly by the National Academy of Sciences and the National Research Council. Mr. Sidney D. Kirkpatrick, editor of Chemical and Metallurgical Engineering, has been appointed to succeed Dr. Howe as its chairman.

DIVISION OF GEOLOGY AND GEOGRAPHY

WALTER H. BUCHER, chairman; RICHARD HARTSHORNE, vice chairman

Research for new deposits of strategic minerals and sources of oil and gas and technical aid in their development necessarily demanded first attention of geologists in connection with the war effort. In the broad field of geography, where opportunities for making important contributions loom large, nearly every professional worker was quickly drafted into service in the numerous technical bodies organized by the armed forces and Government agencies on our entrance into the war. In spite of handicaps the division has undertaken a number of projects in the field of geology, two of which deserve special mention.

Bibliography of military geology and geography.—Continuing this bibliography, which was compiled before the entrance of this country into the war and distributed early in January 1942, the first annual supplement was prepared under the chairman's direction by Miss Marie Siegrist, bibliographer of the Geological Society of America, and Miss Elizabeth T. Platt, the late librarian of the American Geographical Society. Like the original, the supplement was published and widely distributed free of charge by the Geological Society in cooperation with the division.

Map presentation of physical features of military importance.—A committee was organized under the direction of Prof. Samuel Van Valkenberg, of Clark University, for the purpose of investigating the methods of map presentation of physical features of military importance. One major project was organized—the preparation of a physiographic map, similar to the well-known map of the United States drawn by Prof. N. M. Fenneman, of the University of Cincinnati, for the northern half of the Mediterranean region. To make it useful as a wall map a large scale was chosen (1:500,000), and the areas are to be

colored according to a unified scheme. Each physiographic unit is to be illustrated by typical photographs and reproductions of characteristic sections of large-scale topographic maps, assembled in folders and accompanied by a brief text written in nontechnical language.

So far the maps of Sicily, Calabria, the Peleponnesus, and the Dinaric regions have been completed, but the progress of the work is being retarded, if not jeopardized by the withdrawal of key men into work with geographic sections of the armed forces.

Geography.—A valuable contribution to the war effort was made through the Census of Professional Geographers, based on questionnaires sent out in 1941. Over 850 returns were tabulated in a master-combined list. This list has been in constant use in connection with the placement in Government agencies of qualified geographers.

In order to derive a correct picture of the manpower situation from such a list, standards had to be set up and agreed upon by which the different kinds and grades of professional training and achievement in geography are to be defined. This task was undertaken by a subcommittee headed by Mr. W. L. G. Joerg, of The National Archives. The study of the questionnaires by the committee has been facilitated by microfilming them, and a framework has been created for the detailed tabulation of all the data contained in them. A first draft of definitions of types of professional training has been submitted for discussion, and the detailed tabulation is being carried out. The ultimate result is expected to give a synoptical view of the manpower situation in professional geography in the United States.

Through its executive secretary, Dr. George B. Cressey, of Syracuse University, the committee on geography of Eastern and Southern Asia, which was created to meet a definite need, has done much in locating and developing trained workers in the field indicated and in providing literature and other assistance. The funds for this work were provided by the American Council of Learned Societies and the National Research Council.

Soon after our entry into the war practically every competent geographer found himself drawn into technical employment with the armed forces or with one of the Government agencies, or overburdened with teaching. One result of this has been the practical suspension of research activities by the geographical section of the division.

Geology.—In geology the situation is different. Only a few of the diverse fields of this science bear directly on the war effort (mineralogy, economic geology, and engineering geology), and the armed forces, with far more pressing needs, have been slow in inducting geologists as technical advisers. In the search for raw materials the urgent demand is for young men capable of doing the necessary "leg work" rather than for maturer men. A manpower shortage is threatening in geology largely in the ranks of well-trained young men capable of pushing with vigor the strenuous field programs of the surveys and private companies which are needed to restore the depleted mineral and oil reserves. As a result a considerable number of geologists have remained in positions which have enabled them to continue in abstract scientific research. Accordingly, the work of some of the committees could be carried on, and one new committee was appointed for study of the common problems of genetics and paleontology. The activities

of the committees on ore deposits, density currents, and cryptovolcanic structures have had to be suspended for the duration of the war.

The incorporation of corrections and additions to the preliminary edition of the tectonic map of the United States and the final drafting of the manuscript map were completed last spring by Dr. Philip B. King, assistant geologist of the United States Geological Survey and vice chairman of the committee on tectonics of the division. His masterly handling of this unusually difficult task deserves special recognition.

This tectonic map is the first attempt to assemble for so large a country all known details of structure of sufficient size to be shown at all. It will prove a powerful stimulus to further field studies and to attempts to grasp the physical meaning of the features shown. The undertaking was made possible through grants-in-aid and conference funds from the National Research Council, a contribution from the Geological Society of America toward the expense of the preliminary edition, and, above all, the support of the American Association of Petroleum Geologists in the printing and distribution of the preliminary and final editions. Technically, the work is the result of the whole-hearted cooperation which the committee, under the chairmanship of Dr. C. R. Longwell, of Yale University, received from numerous geologists and geological organizations in all parts of the country. It is especially indebted to the United States Geological Survey, which gave official support and made available facilities and the services of competent men, particularly Dr. King.

The second great enterprise of the division in original map compilation, the glacial map of North America, has also reached the final stage of printing. It is accompanied by an explanatory text which will be issued in pamphlet form. The Geological Society of America has agreed to publish this work, which was made possible through grants-in-aid and conference funds from the National Research Council, contributions from the American Geographical Society, and the support of the Geological Society of America.

The work represents a triumph of effective international cooperation between the United States and Canadian members of the committee under the chairmanship of Dr. R. F. Flint, of Yale University. It owes a special debt to the Geological Survey of Canada, which was in a position to make large contributions of new data and made available its facilities and much of the time of Dr. D. A. Nichols. The latter, a member of the committee, not only assembled the Canadian material but also supervised the final drafting of the map.

Several years ago a large report on ore deposits as related to structural features was completed by the committee on processes of ore deposition. This large volume, with papers by 70 contributors, was published in the latter part of 1942. It was edited by the chairman of the committee, Dr. W. H. Newhouse, of Massachusetts Institute of Technology, and published by the Princeton University Press. It is a valuable contribution to the literature dealing with the influence of structure on the accumulation of ore deposits.

The preparation and publication of new correlation charts for all the sedimentary formations of North America, which was begun a number of years ago by the committee on stratigraphy, is making steady progress under the chairmanship of Dr. Carl O. Dunbar, of

Yale University. The charts and accompanying text are published in the Bulletin of the Geological Society of America as they are completed. Reprints may be secured from the society at cost. Three of the projected series, those on Silurian, Devonian, and Cretaceous, have appeared in print so far. Five others are either completed or nearing completion. Each chart is the product of critical analysis and discussion by a separate subcommittee composed of men especially familiar with the system involved.

The annual report of the committee on the measurement of geologic time (1941–42), Dr. Alfred C. Lane, of Tufts College, chairman, was mimeographed and distributed in the latter part of 1942. It follows the plan of the earlier reports, comprising a number of papers on diverse subjects and an annotated bibliography of the whole field covered by the committee. This annual summary of the widely scattered literature is prepared by the vice chairman of the committee, Dr. J. P. Marble, of the United States National Museum, and constitutes an invaluable tool. Through these annual reports and through constant correspondence with workers in all parts of the globe the committee exerts a wide influence on the studies in this important field.

The purpose of the committee on marine ecology as related to paleontology, Dr. Harry S. Ladd, of the United States Geological Survey, chairman, is to make available to paleontologists information concerning new developments in modern ecology and to stimulate cooperation between ecologists and paleontologists in the study of paleo-ecological problems. To this end the second annual report of the committee, which was distributed in the early part of 1943, makes available contributions through papers on specific ecological subjects, including bibliographic lists and reports on paleo-ecological subjects. It is hoped that these reports will gain the widest possible distribution among plant and animal ecologists as well as among paleontologists.

The committee on the deformation of the Ross Shelf ice was organized to exploit, in the interest of structural geology, the wealth of air photographs (about 1,000) of the Ross Shelf ice, chiefly of the region about the Bay of Whales, which were secured by the three Antarctic expeditions organized and conducted by Admiral Byrd in 1929, 1934, and 1940. In the 10 years between the first and the last of these expeditions the opposing "shores" of thick ice have moved toward each other to the extent of 5 miles. This movement has produced complicated fold and fault patterns in the thinner shelf ice between them, and larger fold and shear phenomena where the shores met head-on at the upper end of the bay. In many respects this region represents a large-scale model of the sort of deformation which has produced the folded mountain belts of the earth's surface.

With the aid of the photographs and important quantitative data secured on the ground chiefly during the last expedition, it is possible to determine with a fair degree of accuracy the major elements that have controlled the mechanics of deformation in the case of the Ross Shelf ice. It is hoped that through a critical comparison of the structural features observed on it with those of comparable though much larger structures of the earth's crust, valuable insight may be gained into the mechanics of the processes that produced them.

Maj. Paul A. Siple, who took part in the expeditions, is in charge of the work of assembling the data and preparing the necessary maps.

Working under his supervision, Miss Mary E. Dean, who has been cartographic assistant of the United States Antarctic Service, has completed the map of the Bay of Whales, showing the outlines for 1929, 1934, and 1940. Other work is in progress.

The committee on common problems of genetics and paleontology comprises two sections—one centered on the west coast deals with the botanical aspects and one centered on the east coast is devoted to the geological aspects of the field.

The origin of species is still far from being understood. Two lines of research have added much knowledge that was not available at the time of the classical debates on this topic. The nature of short-range changes has been shown in startling new light by the discoveries of genetics, while paleontology has produced a wealth of new material capable of quantitative analysis which is beginning to shed light on the long-range changes. The two fields are clearly complementary, but each science has developed a nomenclature and technique of such intricacy that many workers in the two fields have lost contact with each other. This committee aims to bring the two groups together by providing joint discussions and by producing a symposium that will furnish essential keys to the literature in both fields.

DIVISION OF MEDICAL SCIENCES

LEWIS H. WEED, chairman; WILBURT C. DAVISON and ROBERT F. LOEB, vice chairmen

The committees of the division of medical sciences have exercised and continue to exercise important advisory functions in the wide field of medical sciences. It would be most desirable if all of the divisional interests represented by standing committees could receive ample financial support, but during the period of the war it seems futile to hope for additional funds, particularly in those fields which seem to have but indirect relationship to emergency problems in medicine.

American Registry of Pathology.—The activities of the Registry, which is lodged in and intimately connected with the Army Medical Museum, have continued in the customary effective way during the past year. The staff of the Army Medical Museum has been increased considerably by the assignment of additional officers for duty there, and the flow of pathological materials emanating from the war has assumed very large volume. The Registry will necessarily profit by such additional pathological material. In spite of the unsettled conditions due to the war, there has been very little reduction in the number of cases received from civilian contributors. The Registry may, however, suffer from the absence of so many physicians on active duty since the answers to Registry follow-up letters will not be high. However, in the Bladder Tumor Registry the follow-ups have been particularly encouraging.

The Registry of Pathology has received during the year appropriations of $1,500 each from the American Academy of Ophthalmology and Otolaryngology, the American Dental Association, and the American Urological Association. In addition, the American Dental Association appropriated $478 for the new edition of the Atlas of Dental and Oral Pathology. The American Broncho-Esophagological

Association has also contributed $50. The material in the Registry collections and in the museum has been used for study by visiting physicians from various sections of the United States, as well as from Central and South American countries, England, and China. New editions of the Atlases of Ophthalmic, Otolaryngic, and Dental and Oral Pathology have been prepared during the year and have been in great demand in the several fields. The following table shows accessions to the Registry during the past year:

	1942	Total
Ophthalmic pathology	1,382	12,930
Otolaryngic pathology	251	1,936
Bladder tumor	168	4,378
Kidney tumor	46	604
Lymphatic tumor	219	1,344
Skin	161	1,277
General tumors	254	1,006
Chest tumors	57	244
Neuropathologic	29	61
Dental and oral	367	2,739

Committee for research in problems of sex.—This committee, which has been one of the most effective groups in the division of medical sciences, has just completed its twenty-second year of activity. The membership of the committee has been changed only infrequently, and it is hoped that no changes in personnel will be necessary for many years. The work of the committee has been supported by the latest grant of the Rockefeller Foundation in the amount of $150,000 over the 3-year period from July 1, 1941, to June 30, 1944. During the present year (1942–43) the committee worked under a total budget of $43,900. Of this sum $41,400 was devoted to grants-in-aid and the remainder to administrative purposes. There are 15 projects under support, and while most of the projects were for relatively small amounts, several of them were of considerable magnitude. The larger grants represented for the most part continuation of previous support. The budget recommended to the division by the committee for the year 1943–44 aggregated $50,825. Of this total $47,325 was devoted to 12 grants-in-aid of research. Administration called for the expenditure of $2,000, and a special item of $1,500 for conferences was included in the budget. While the sum represents a larger allocation for the year than in 1942–43, the increase may be accounted for by a marked augmentation of the grant to Indiana University for studies on human sex behavior under Prof. Alfred C. Kinsey.

The war has shown a considerable effect on the projects under support by the committee for research in problems of sex. However, certain projects have proved to be of utmost importance, and the field of investigation seems to be as promising as in the past. The number of papers published during the year has been large, and the excellence of the work has been thoroughly maintained. It is hoped that continuing support over a number of years can be obtained for the future program of the committee.

Committee on research in endocrinology.—The committee has completed 6 years of service, and during this period has allotted approximately $240,000, all of which represented appropriations from the John and Mary R. Markle Foundation. During the first 5 years of activity 56 different investigators were under subsidy by the commit-

tee. The large number aided was made possible by careful attention of the committee to the progress reported by individuals receiving grants.

During the current year the distractions of the war have seriously interfered with the research freedom on endocrine problems. Occasionally by change of emphasis the investigators have been able to apply their observations to questions directly related to the military effort in medicine. With the withdrawal of many of the investigators into the armed services the applications for grants this spring diminished in number. In the period 1942–43 no outstanding discoveries were reported, but the investigators who continued in their laboratories have made important steps forward. Insofar as possible the committee has continued to favor basic scientific studies in its special field in order to preserve continuity of effort in directions of permanent and highly promising significance. There continues to be abundant evidence that the generous financial support from the Markle Foundation has greatly stimulated and promoted progress in the fundamental realm of endocrinology.

During the past year (1942–43) the committee worked under a budget of $39,450. Of this total $37,950 was devoted to support of 18 projects, and administration was provided for by the sum of $1,500. At the annual meeting of the committee on April 24, 1943, 13 grants in aid of research, totaling $27,900, were approved.

During the last 2 years not all the appropriation made available by the John and Mary R. Markle Foundation has been allocated in the form of grants, so that it was recommended that for the next 2-year period the appropriation be reduced from $60,000 to $35,000 per year. This has been done, and it is expected that this sum will make it possible for the committee to support amply those investigations deemed eminently worth while.

Advisory committee on drug addiction.—The small advisory committee on drug addiction which continued the work of the original committee on drug addiction has been active during the past year. The committee acted as adviser on two drugs—demerol and desomorphine. The first of these does not seem to have any advantage over morphine except in its possible usefulness in conserving morphine supplies. Desomorphine has been widely used in Europe, but the evidence thus far accumulated is that it has no advantage over monoacetylmorphine. It seems likely that this committee will prove useful as an advisory body in the large program of work in this field now being carried out under the general auspices of the United States Public Health Service.

Committees on military medicine.—For more than 3 years the division of medical sciences has acted in an advisory capacity to the Surgeons General and for this purpose has established consultative groups covering the various medical subjects concerned in the war effort. While at first serving in an advisory capacity only to the Surgeons General, the activities of these committees have been extended to other Federal agencies. In a previous report the relationship of these advisory committees to the Committee on Medical Research of the Office of Scientific Research and Development was described. In addition to the relationship of these committees to the Surgeons General and to the Committee on Medical Research, the division has served other Government agencies. The committee on drugs and

medical supplies has been the chief advisory agency in this field to the War Production Board. Its contribution by way of advice and recommendation has been great. Under the general jurisdiction of this committee the national program for the conservation of quinine has been developed.

Recently the Food Distribution Administration requested that the division establish a subcommittee on medical food requirements to function under the jurisdiction of the committee on drugs and medical supplies. The general responsibilities of this new subcommittee lie in the determination of medical food requirements in excess of the allotments provided by the national rationing system. The advice of the subcommittee is sought not only in the case of individual patients suffering with certain diseases but also with the wide problem of food rationing for hospitals.

The committee on chemotherapeutic and other agents has served as the advisory body to the Committee on Medical Research in regard to the clinical and experimental use of penicillin. The Committee on Medical Research has sponsored a program of cooperative effort looking to the increased production of the product and has been concerned with the conservative employment of such supplies as have been available for civilian purposes. The committee has designated Dr. Chester S. Keefer, of Boston University, chairman of the committee on chemotherapeutic and other agents, as its executive agent in determining the distribution of the drug to civilian institutions and physicians. Dr. Keefer has carried out this exacting task with great wisdom and judgment; the results of his careful distribution are apparent in the excellent clinical studies and reports based upon the small quantities of the drug thus far available. The general policies for the distribution of the drug and the types of clinical diseases for which the drug is supplied are determined by the members of the committee on chemotherapeutic and other agents.

From the deliberation of the various committees many recommendations have gone forward to the Surgeons General, to the Committee on Medical Research, to the War Production Board, to the Food Distribution Administration, to the Office of Foreign Relief and Rehabilitation, and to other Federal agencies. The relationship of these committees to the war effort has become even more clearly defined during the past year. They are serving as bodies which furnish the Army and Navy Medical Corps, the Public Heath Service, and other Federal agencies with professional advice. Also these advisory groups function in medical research pertaining to the war, as defined by contract between the Office of Scientific Research and Development and the National Academy of Sciences and the National Research Council. To further this relationship the chairmen of all of the 12 main committees have been appointed by Dr. Vannevar Bush, Director of the Office of Scientific Research and Development, as consultants to the Committee on Medical Research.

Some idea of the activities of the division in connection with the war effort may be had from the following summary of committee meetings and conferences. During the first 6 months of the year under report the division held 90 meetings of committees and 37 special conferences. During the second 6 months there were 105 meetings and 49 conferences. Likewise, the magnitude of the undertakings may be judged by the sums involved in Government contracts made by the

Office of Scientific Research and Development with various institutions in this country on recommendation of the committees and subcommittees of the division. To June 30 the contracts, 378 in number, aggregated a total financial commitment of $9,192,783.96. These contracts were all recommended by the Committee on Medical Research to the Director of the Office of Scientific Research and Development, and for the most part the actions of the Committee on Medical Research were based on recommendations of the committees of the division. Some of the contracts were made on the recommendation of the division of chemistry and chemical technology.

As the war proceeded into its second year it became apparent that certain medical problems were of paramount medical importance from the operational standpoint. Foremost among these problems was malaria, its prevention, suppression, and therapy. The subject of malaria was initially handled by the subcommittee on tropical diseases, but as the demand for new antimalarials developed and as the need for wide study of the disease and its medication increased, a conference group was established. As the research program for a comprehensive investigation of all aspects of the disease enlarged, it was desirable to replace the ad hoc conference group and to appoint four panels under the jurisdiction of a coordinating group. Two of these panels—one on the synthesis of antimalarials and one on the biochemistry of antimalarials—function within the division of chemistry and chemical technology, while the other two—one on the pharmacology of antimalarials and one on the clinical testing of antimalarials—operate within the division of medical sciences. The subcommittee on the coordination of malarial studies is composed of the chairmen of the four panels, with Dr. Frederick Hanes, of Duke University, as chairman. As ex officio members the coordinating group includes the chairmen of the committees on medicine and on chemotherapeutic and other agents, and of the subcommittee on tropical diseases. The coordinating group carries on its functions relatively independently, with the development of new drugs by the chemists, the testing of new products by the pharmacologists, and the final determination of the clinical value in man by the physicians.

As one of the important adjuncts to the advisory functions of the committees on military medicine, the division has established a small office of information, with Dr. Oswei Temkin, of the department of the history of medicine, Johns Hopkins University, in charge, and with Dr. Elizabeth Ramsay as associate. The establishment of this informational office was made possible by a generous grant of $17,000 from the Carnegie Corporation of New York. In order to obtain a broad picture of current medical advance, newspapers, medical, and scientific periodicals, Government publications, and miscellaneous sources are scanned for articles relative to war medicine. From the newspapers and general magazines the clipping files accumulated in the first 6 months contained approximately 1,100 items. From the medical and scientific periodicals and Government publications, and from important miscellaneous sources a far greater number of references have been obtained and cataloged. Up to the end of the year approximately 16,000 index cards had been filed. The information obtained by the staff in this divisional activity is distributed by a typed list of medical news items, issued each workday. The index files, as well as the personnel of the office, are frequently consulted for

information, and in addition requests for translation of articles from foreign languages have been met.

Two definitive reports have thus far been prepared by the staff of the informational office: Report on the Treatment of Thermal Burns (79 pages, dated February 17, 1943), and Report on Blast Injuries (54 pages, dated June 11, 1943). These reports, dealing with both published materials and "restricted" documents, have been planographed and distributed widely among medical officers and investigators in the United States, Canada, and Great Britain. It may be said that the work of this group is of increasing importance to the war effort in medicine. Carefully selected materials properly indexed have first to be assembled. All the materials collected will ultimately prove of great service in the medical history of the present World War.

Another activity of the division in the field of military medicine has related to the encouragement and development of teaching of tropical medicine in the medical schools of this country. A very generous appropriation of $40,000 was made by the John and Mary R. Markle Foundation on June 25, 1942, to the National Research Council to establish a number of lectureships in tropical medicine. This undertaking, first suggested by Brig. Gen. James S. Simmons, liaison officer to the division from the War Department and director of the Division of Preventive Medicine, Office of the Surgeon General, was designed to foster interest by medical students in tropical diseases, as the medical students of today will unquestionably be confronted with the responsibility for the treatment of these diseases. Originally the plan called for dispatch to medical schools of a number of Army and Navy officers, as well as outstanding civilian authorities. With the increasing demands for the services of the medical officers it did not prove feasible to send the officers on any protracted tours. The program has been fairly successful, though it has been modified largely by the selection of a single lecturer to make an extensive tour of the schools. The first lecturer of this nature has been succeeded by a second, and it is hoped that the plan may be followed throughout the coming year. Certainly the emphasis given to the teaching of tropical diseases by this generous appropriation has been reflected in increased facilities for this purpose in many medical schools, and there has resulted a general improvement and enlargement of the courses of instruction. It is obvious that the study of tropical diseases must be advanced in every medical school in this country.

In addition to this major appropriation for tropical diseases, the division of medical sciences has handled a grant made to the Research Council by the John and Mary R. Markle Foundation in the amount of $3,000, to enable the Office of the Surgeon General of the Army to distribute to medical schools of this country a survey of the latest information concerning medical problems in all countries. The material is largely related to the problems of the tropics and consists of charts, maps, lantern slides, etc., illustrating the geographical distribution and incidence of tropical diseases.

DIVISION OF BIOLOGY AND AGRICULTURE

ROBERT F. GRIGGS, chairman; L. A. MAYNARD, vice chairman

A conference of biologists, called by the Council in August 1942 to consider how they could best contribute to the war effort, developed several specific suggestions. One recommendation proposed the

establishment of a central committee which would function for the biological sciences in a similar way to that of the very successful Committee on Medical Research. Dr. Douglas Whitaker, of Stanford University, was asked to formulate the project and spent some months in Washington surveying the situation and outlining procedure. Funds in sufficient amount to implement the project could not be obtained, however.

Emergency Food Plants and Poisonous Plants of the Islands of the Pacific, the first of the pocket manuals of edible and poisonous plants of various war areas which were requested by the armed services and prepared by collaborators of the division, appeared in May. Manuscripts for similar illustrated booklets on edible plants of the Arctic, the Caribbean area, the Guianas, and Brazil are in press.

To avoid duplication of effort in preparing such manuals a conference called to consider the matter suggested that all recommendations concerning the survival of isolated men be cleared through the Ethnogeographic Board. The division will assist in problems arising in the field of biology. The Ethnogeographic Board requested the division to confer with parasitologists and medical men from the armed forces concerning parasites likely to affect our troops in the Southwest Pacific. A report on trematode diseases and their molluscan intermediate hosts in the islands of this region was prepared by a small ad hoc committee of the division and transmitted to the Army and Navy.

The practicability of spinning palmetto fiber into twine was investigated at the request of the War Production Board. After thorough investigation the undertaking of such a project was discouraged.

With its expanding operations the membership of the food and nutrition board has increased from 37 to 44, and the number of committees from 9 to 12. Thirty-five experts in their fields who are not members of the board are committee members. Dr. Frank G. Boudreau continued as chairman throughout the year, with Prof. H. C. Sherman as vice chairman. The executive secretary, Dr. Frank L. Gunderson, served as full-time coordinator of the activities of the board, assisted since April 1943 by Dr. Ross A. Gortner, Jr., as associate executive secretary.

The enrichment of from 50 to 75 percent of all family flour and bakery bread with thiamine, niacin, and iron was brought about late in 1942 through actions which included recommendations of the board and the committee on cereals. In December the War Food Administrator required in his first food-distribution order that, effective January 18, 1943, all wartime bakery bread must be enriched according to the standards originally recommended by the board. Subsequently the board recommended to the Administrator that the order include all family flour. The board's recommendations for revisions of the enriched flour and bread standards were the basis of an official hearing on enriched flour, bread, and farina, held under Food and Drug Administration auspices on April 19. The enrichment of corn-meal and grits in the Southeastern States has also been encouraged by the board.

The committee on nutritional aspects of ageing, with financial assistance from the Josiah Macy, Jr., Foundation, has a program of research well under way at the Elgin State Hospital. The investigation will probably continue for several years.

The committee on protein foods has answered two inquiries from the Food Distribution Administration relating to (*a*) the minimum daily allowance of protein for civilian purposes and (*b*) the percentage of this minimum daily allowance which should come from biologically superior protein foods. It is also studying the total protein supply available for civilian consumption and has compiled a report on the nutritive value and commercial availability of the proteins of yeast, soybeans, peanuts, cereal germs, etc., for supplementing the decreased supplies of meat and dairy products.

The committee on dietary allowances has formulated and transmitted for the Office of the Surgeon General of the Army suggestions concerning minimum amounts of dietary essentials necessary for men in the armed forces for short emergency periods (not exceeding 6 months). The values are approximately 70 percent of those in the recommended dietary allowances.

The committee on the nutrition of industrial workers has made a report on the allocation of foods to industrial food services, and another on the effects of vitamin supplements on workers. The effects of toxic chemicals and adverse conditions of temperature and humidity on the nutritional needs of workers is also being studied.

The committee on food composition, aided by Dr. Paul L. Pavcek, technical secretary, is assembling, coordinating, and appraising food-composition information for the War Department. With the cooperation of Federal, academic, and industrial laboratories the committee is providing information relating to all foods of interest to the armed services for use both here and abroad, including garrison, special, and emergency rations, dehydrated vegetables and soups. Specific methods of vitamin assay are being studied, and experiments on the loss of nutrients in the preparation of foods are in progress. On the request of the Committee on Medical Research the committee has taken over the technical supervision of four research projects under the Office of Scientific Research and Development contracts relating to food composition.

The relation of nutrition to the incidence of dental caries was brought out by the reports of the Selective Service System medical examiners, which showed dental caries a leading cause for rejection. During the last year the board has engaged a technically qualified bibliographer and is conducting a survey on dental caries which it is hoped will help bring orderliness in thought and form a foundation for a wise research program.

The committee on milk and the committee on fats have each made surveys and reports for the Federal departments concerned for the purpose of helping further to make the limited supplies of these foods serve the needs of American armed forces, of our civilians, and of the Allied Nations. The latest was a report on margarine.

Two reports were transmitted to the Food Distribution Administration giving the board's recommendations on the preferential allocation of fats and oils, and the preferential allocation of sugar.

A survey of the Nation's supply of synthetic and natural concentrates of vitamins was made by a special committee. Based on this survey the board made recommendations regarding the need for expanding production facilities to meet the minimum requirements of the American civilian population.

At the United Nations Conference on Food and Agriculture, Dr. Frank G. Boudreau served as technical adviser to Surgeon General Parran and as secretary of the first section, relating to consumption levels and requirements.

Dr. Lydia J. Roberts, of the University of Chicago, spent 6 weeks in Puerto Rico studying nutritional conditions at the request of Dr. M. L. Wilson, of the Food Distribution Administration. On a second trip she set up a nutrition workshop program for the island.

The following reports by the board and its various committees have been made available for general distribution through the Reprint and Circular Series of the Council—The Food and Nutrition of Industrial Workers in Wartime (No. 110), April 1942; The Nation's Protein Supply (No. 114), August 1942; Recommended Dietary Allowances (No. 115), January 1943.

The committee on wartime diet made an exhaustive study and report on the comparative essentiality of foods, dividing the major staple foods for the United States into three groups—(1) those considered essential, expedient, or approved; (2) those considered intermediate; and (3) the foods adjudged dispensable or nonessential during the wartime emergency. This listing is of basic importance in our national food program.

The food and nutrition board is now prepared to investigate the complex questions concerning nourishment of our own people, helping other Allied Nations, and providing as best we can for the inhabitants of countries reoccupied by the Allies.

The committee on animal health held its first meeting on March 4, 1943. It will be concerned with research and the recommendation of practical measures based on the results of research on any problem relating to health or productivity of our animal populations. The work will be integrated with that of the Inter-Association Committee on Animal Disease and Production of the five national societies—American Veterinary Medical Association, United States Livestock Sanitary Association, American Society of Animal Production, Poultry Science Association, and Dairy Science Association. Three subcommittees have been appointed to study bloat in ruminants, fast milking, and avoiding trauma in relation to prevention of mastitis, saving labor and increasing milk production, and losses in young pigs.

The committee on animal nutrition sponsored several reports which were prepared by its various subcommittees—War Emergency Plans for Raising Calves and Heifers, the Nutrition of Swine During the War Emergency, the Effect of Storage of Grains on Their Nutritive Value, Suggestions for Meeting the Poultry Feed Situation During 1943, Is Animal Protein an Essential Constituent of Swine and Poultry Rations? and the Use of Phosphorus-Containing Substitutes for Bone Meal in Livestock Feeding, with Particular Reference to the Fluorine Hazard. Other reports which are in preparation deal with the nutritional requirements of hogs and symptoms of nutritional deficiencies, tables of vitamin values of animal feeds, and digestibility of feeds.

Resolutions were submitted to the appropriate Government agencies on the inadequacy of feed supplies available to farmers, the need for salvage of byproducts of alcohol plants to provide additional protein and vitamins for animal feeding, the usefulness of urea as a protein

substitute in feeding cattle and sheep, the production and use of defluorinated rock phosphate to supplement the inadequate supply of bone meal, and the importance of fish meal as a feed for poultry and swine.

The committee has considered the problems arising from the increased competition between animals and man for the same basic food supplies. The paramount importance of adequate human nutrition is recognized, but insofar as milk, meat, and eggs are deemed essential for the human food supply the needs of animals must also be taken into account in food planning.

The chief function of the committee on crop protection, organized in the fall of 1942, is to coordinate the activities of the war committees of the American Phytopathological Society and the American Association of Economic Entomologists. They met in February with the war committee of the American Phytopathological Society. The reports which these groups have compiled on the occurrence and control of diseases and insect pests are of great value in our intensified extension program. The committee sponsored a symposium on Dosage Experiments with Insecticides and Fungicides in relation to stretching available supplies of critical materials. A statement was prepared on the need for investigating the effects on insect populations and disease of the radical changes caused by war needs in crops grown over wide areas.

The committee on fisheries resources, concerned with the larger fisheries, was appointed partly as a result of a conference on resources of the sea and inland waters held in February. Its companion, the committee on research on food resources of coastal waters, has considered ways and means of expediting research designed to increase the yield of food, animal feed and substances of biological value from organisms inhabiting coastal waters. The committee will attempt to aid investigators with research facilities, especially at marine stations and at universities near the coast, in defining problems that need to be done, and to coordinate work in different institutions. Government agencies, both State and Federal, which are short of manpower are invited to make use of the committee's coordinating function to farm out problems that might suitably be turned over to qualified investigators with free time and facilities.

The committee on the training of research workers in agriculture was authorized by the Research Council in June 1943 as a result of recommendations by the division's committee on fellowships, the fellowship board in the natural sciences, members of the division, and correspondence with leaders in scientific agriculture.

The committee on forestry, which is a joint committee with the Society of American Foresters, is interested in all fields of forestry, with first consideration given to research that may contribute to current war efforts. Its task is to emphasize lines of endeavor not fully covered at the present time and to aid existing agencies in the conduct of important supplemental projects. A grant of $2,500 from the General Education Board makes possible field trips by the chairman for regional conferences on local problems, as well as personal discussions with representatives of Federal, State, and institutional agencies now engaged in research in forestry, and with members of the committee.

Dr. T. F. Anderson, former RCA fellow and secretary of the committee on the applications of the electron microscope, has completed studies during the year, in collaboration with specialists among the committee members, on connective tissue fibrils and sections of striated muscle. Work has been published in the fields of viruses, bacteriophage, bacterial morphology, colloids, and entomology.

Studies carried on during the year under grants from the committee on human heredity dealt with the relative roles of heredity and environment in the determination of the components of intelligence, the Rh factor, the inheritance of cerebral dysrythmia, the congenital absence of human teeth, and the inheritance of various types of mastoids and sinuses. The chairman of the committee continued his lectures on medical genetics at various medical and biological centers throughout the country.

The committee on wartime modification of the curriculum in biology, established at the request of the United States Office of Education, reported to that Office, after a meeting and extensive correspondence with representatives of the biological profession, that it is unwise to introduce marked changes in our present courses in the biological sciences in order to make them serviceable to war conditions. The committee recommended that the introductory courses cater to the student who does not intend to go further with these sciences; and that the colleges give more attention to training teachers in biology for the secondary schools.

The Tropical Plant Research Foundation, established through the activities of a committee of the division, was a potent force for the much needed development of tropical biology in the 1920's. Under the able leadership of Dr. W. A. Orton, it carried through and published a number of valuable researches in the American tropics. The death of Dr. Orton and the onset of the depression crippled it so severely that it has never been able to resume its former usefulness. The trustees voted on May 21 to discontinue the foundation. The balance of their funds has been offered to the division, with the hope that it may be used to further the development of tropical biology. The library of the foundation has been given to the new Inter-American Institute of Agricultural Sciences in Costa Rica. It is marked with a bronze tablet commemorating the services of William A. Orton to tropical agriculture.

At the request of the Wildlife Society, approved by the executive committee of the division, the war committee of the Wildlife Society was made a joint committee of the division and the society.

DIVISION OF ANTHROPOLOGY AND PSYCHOLOGY

LEONARD CARMICHAEL, chairman; F. M. SETZLER, vice chairman

The anthropologists and psychologists of the country as organized in the division of anthropology and psychology have given during the past year most generously of their time, energies, and intellectual resources in an attempt to deal effectively with the many war problems with which they have been confronted, most of which have assumed the form of actual requests for assistance and advice from the services and from governmental agencies working in these areas.

Early this spring a committee on war service of anthropologists was formed in the division for the purpose of preparing a report on anthropology during the war and after, in order to acquaint anthropologists outside of Washington with the many diversified activities now being engaged in by people of that profession, and to orientate universities with regard to various problems and projects which might be undertaken. This report, which is enlightening, informative, and most important, has been mimeographed and may be obtained from the division office upon request.

The committee on the anthropology of Oceania, and the committee on African anthropology have published a series of confidential personnel lists on each of these regions, each installment containing names of individuals with experience in the region, together with pertinent information regarding each individual. These have been distributed to authorized persons, upon request, by the Ethnogeographic Board and have apparently proved to be of great value to these governmental agencies. Other projects, either completed or in progress in the fields covered by these committees, include a special study of western Sumatra and the islands off that coast; a directory of organizations in America concerned with Oceania; a list of anthropologists having administrative experience; the formation of a subcommittee concerned with native government in Oceania; the preparation of a series of strategic bulletins on Oceania; a list of native Africans living in the United States; a bibliography of north Africa, which, although still in preparation, is constantly being utilized by the services; a series of maps with tribal index; and a compilation of native names of diseases in Africa. The Ethnogeographic Board has been of invaluable assistance in the distribution of materials provided by these two committees.

The committee on food habits, an advisory research committee complementing the food and nutrition board administered by the division of biology and agriculture, now operates with the Nutrition and Food Conservation Branch of the Food Distribution Administration of the United States Department of Agriculture. This committee, under the able direction of its chairman, Dr. Carl E. Guthe, and its executive secretary, Dr. Margaret Mead, has continued to conduct investigations in various parts of the country on nutrition and food habits, and to issue reports on these studies. The committee has been actively engaged in compilations, such as attitude sampling, confidential reports, and dietary patterns of minority groups. A series of conferences has been held throughout the year to bring together local groups in various parts of the country.

The Committee on Child Development under the chairmanship of Dr. R. S. Woodworth, of Columbia University, held a conference on war and post-war child services and research in Chicago and Washington on March 19 and 20, 1943. The deliberations of the conference were focused around plans for work which might be undertaken with a minimum of financial assistance, and committees were formed to initiate plans for (1) child accounting, a systematic accounting of children which would show the number and location of children by different age groups, e. g. in homes, schools, institutions, industries, stores, and other jobs; the losses, wastage, maladjustments, problems, and difficulties of such children, and the various agencies engaged in child care, education, welfare, shelter, health work, recreation, etc.; (2) minimal research requirements during the war and reconstruction

period in the United States and abroad; (3) research problems for intensive investigation.

The Society for Research in Child Development, with offices in the National Research Council, has continued the publication of Child Development Abstracts and Bibliography, a bimonthly journal, now in its eighteenth year; Child Development, a quarterly journal, in its fifteenth year, and Monographs of the Society, in its ninth year. Receipts from membership dues, journal subscriptions, reprints, and monograph sales provide a fund by means of which the publication program may be continued.

The committee on classification of military personnel advisory to The Adjutant General's Office has continued its important and effective work under the chairmanship of Dr. Walter V. Bingham. During the year it has dealt with such problems as preinduction screening, the sorting of newly inducted troops, and the selection of officers with leadership ability. In an attempt to solve another problem with which the committee has been faced, an advisory board on mechanical and technical personnel has recently been organized, consisting of five members. This board will explore new means of selecting men who have an aptitude for and may be trained in mechanical occupations of various kinds.

Through its contacts with the armed services and governmental agencies during the past year the emergency committee in psychology, under the chairmanship of Maj. Karl M. Dallenbach, has continued to formulate policies, plan, and advise. Through the activities of its various subcommittees and special committees many extremely important ideas have been brought to the attention of the committee for transmittal to the armed services and appropriate branches of the Government. These include the improvement of training procedures in the learning of the International Morse Code; the training of illiterate soldiers; the detection of mental defectives in the Army specialized training and induction station testing programs; the advancement of the work of women psychologists in connection with the war; the advancement of plans for psychological readjustment in the post-war period; the addition of psychology to the curriculum of the Army specialized training program, and the training of 800 men per year in personnel psychology; and suggestions as to deferment policy for psychologists. Other projects of the committee have included the publication of Psychology for the Fighting Man, under the editorship of Dr. E. G. Boring, of Harvard University; the formation of a subcommittee on problems of leadership; the formation of a subcommittee on survey and planning, which has acted as an overall planning and advisory group and at whose suggestion the Intersociety Constitutional Convention of Psychologists was held; the listing of activities of psychologists and of translators; and the routing of various research projects to universities.

In February 1943 the Office of Psychological Personnel, under the direction of Dr. Steuart Henderson Britt, began its second year of activity, functioning as a clearinghouse of information through which governmental and military agencies have been able to obtain the names and qualifications of individuals eligible for appointment, and as an advisory agency for those desiring to be of help in the war effort. The office has been supported by the National Research Council, the American Psychological Association, the American Association for

Applied Psychology, the Society for the Psychological Study of Social Issues, and the Society of Experimental Psychologists. Following Dr. Britt's resignation on June 1, 1943, Dr. Donald G. Marquis, of Yale University, accepted the directorship of the office.

The committee on Latin-American psychology, under the chairmanship of Dr. J. G. Beebe-Center, of Harvard University, and the committee on Latin-American anthropology, of which Dr. Wendell C. Bennett, of Yale University, is chairman, have cooperated closely with the joint committee on Latin-American studies. A series of articles on psychology in various South American countries is appearing in psychological journals. Exchanges of periodicals with Latin America have been arranged in the case of certain of our psychological journals, and reviews of Latin-American psychology books have appeared in journals in this country.

The committee on problems of neurotic behavior, under the chairmanship of Dr. Walter R. Miles, of Yale University, has continued the publication of the journal Psychosomatic Medicine, and its monograph supplements. One monograph, the Sex Cycle in Women, constituting the first part of volume III, has been published during the year. In December 1942 the American Society for Research in Psychosomatic Problems was formed, subscription to Psychosomatic Medicine being a part of the membership dues. The subcommittee on personality inventory has completed its work and has been discontinued.

The committee on selection and training of aircraft pilots, under the chairmanship of Dr. Morris S. Viteles, of the University of Pennsylvania, has continued its activity during the year through financial support from the Civil Aeronautics Administration. The emphasis of the committee has turned from research to the application of methods and instruments developed by the committee. Among interesting aspects of the work of the committee may be mentioned the following: The C.A.A.-National Testing Service, which was designed for uniform administration and scoring of tests used throughout the country for the screening of candidates for training in the Army phase of the civilian pilot training program; the development of "Patter" and "Fundamentals of Basic Flight Maneuvers," which have been utilized in the war training service program and by the Navy; the preparation of a textbook on aviation psychology under the editorship of Dr. Norman L. Munn, of Vanderbilt University; the publication of a popular article on How to Prevent Airsickness, a development of investigations by Dr. G. R. Wendt, of Wesleyan University; a training institute for pilot instructors, instituted at the request of the war training service at the University of Minnesota, April 1–10, 1943; the continued publication of reports of research sponsored by the committee since its organization; and the development of certain recording instruments.

There has developed in the division during the past year another committee dealing with selection and training problems—the committee on service personnel—selection and training, of which Dr. John M. Stalnaker, of Princeton University, is chairman, and Dr. Charles W. Bray, executive secretary. This committee was set up at the request of the Office of Scientific Research and Development, for advisory and research supervisory services to the National Defense Research Committee in the field of selection, classification, and training of service personnel, and its activities are supported under a contract with that office. It is also called upon for advice from time to time by branches of the armed services.

ANNUAL REPORT OF THE TREASURER

July 1, 1942 to June 30, 1943

TO THE PRESIDENT OF THE NATIONAL ACADEMY OF SCIENCES:

As treasurer of the National Academy of Sciences and of the National Research Council, I have the honor to submit the following report for the year from July 1, 1942, to June 30, 1943. The report is divided into two principal sections of which the first is devoted to the financial transactions of the Academy and the second section is concerned with the accounts of the National Research Council.

(The second part only, that of the National Research Council, is represented here.)

* * *

NATIONAL RESEARCH COUNCIL

The disbursements of the National Research Council, under the authority of the National Academy of Sciences, during the year ended June 30, 1943, amounted to $1,437,657.46. Interest received on temporary investments amounted to $3,270.47.

The book value of securities held by the Council on June 30, 1943, was $152,433.01. Of the total held, $47,762.08 was the book value of the common and preferred stocks and $104,670.93 was the book value of bonds and real estate. The following table shows the current yield on the securities, according to the valuation used:

	Amount	Yield, percent
Book value	$152,433.01	4.29
Market value	155,924.51	4.20

During the fiscal year ended June 30, 1943, the activities of the National Research Council were supported by funds from various sources, as shown below:

(1) For general maintenance expenses of the National Research Council:		
From Carnegie endowment fund		$64,805.54
From central purposes fund of the National Research Council, Rockefeller Foundation, 1943		20,000.00
From Academy emergency grant:		
Advances for general maintenance	$11,800	
For reimbursement from Government on account of overhead	20,000	
		31,800.00
Total		116,605.54

The above contributions were the only ones received for the general support of the National Research Council. The Council has received in addition other funds contributed by a large number of organizations

and individuals for the specific purposes indicated by the donors. The diversity of these research projects is indicated by the list of receipts following, the total of which is several times larger than the total for general maintenance. In order to finance special research projects for the Government pending reimbursement, National Academy of Sciences funds have been advanced as indicated by the starred items below:

(2)	From the Rockefeller Foundation:		
	For National Research fellowships in the natural sciences, year 1942 (RF 39103)		$27,566.78
	For National Research fellowships in the natural sciences, year 1943 (RF 39103)		12,000.00
	For fellowships in medicine, year 1942 (RF 40056)		14,553.68
	For sex research fund, year 1943 (RF 41011)		46,243.80
	For central purposes fund, year 1943 (RF 41111)		35,000.00
	Total from the Rockefeller Foundation		135,364.26
(3)	From John and Mary R. Markle Foundation:		
	For committee on endocrinology, year 1943		34,225.99
	For tropical medicine lectures		15,000.00
	For tropical disease book fund		4,000.00
	Total from Markle Foundation		53,225.99
(4)	From the Carnegie Corporation of New York: For military medicine information service		$17,000.00
(5)	From American Psychological Association, Inc.: For office of psychological personnel		9,350.00
(6)	From the Josiah Macy, Jr., Foundation:		
	For obesity and allergy in childhood	$3,700.00	
	For committee on nutritional aspects of ageing	5,500.00	
			9,200.00
(7)	From Public Roads Administration	20,000.00	
	From sale of publications	3,679.44	
	From dues from members	4,759.61	
	From National Slag Association	100.00	
	For the Highway Research Board		28,539.05
(8)	From various organizations: For Industrial Research Institute dues from members		11,500.00
(9)	From Civil Aeronautics Administration:		
	For aircraft pilots, 1942	$13,700.00	
	For aircraft pilots, 1943	112,500.00	
	For CAA-national testing service	80,467.49	
			206,667.49
(10)	From various organizations for work to be conducted in cooperation with National Bureau of Standards:		
	For fire resistance of materials:		
	The Widmayer Steel Co	$400.00	
	Acoustical Treatments, Inc	100.00	
	Keasbey & Mattison Co	400.00	
		900.00	
	For thermal investigations: Cooperative Research Council	1,050.25	

(10) From various organizations for work to be conducted in cooperation with National Bureau of Standards—Continued.			
For ignition research:			
Firestone Tire & Rubber Co	$3,000.00		
Continental Can Co	250.00		
		$3,250.00	
For construction of high precision standards:			
W. & L. E. Gurley		1,327.00	
For investigation of high-strength reinforcement of concrete: American Isteg Steel Corporation		5,000.00	
			$11,527.25
(11) From various organizations:			
For committee on sound control in vehicles: Office for Emergency Management			26,981.92
For committee on optical plastics: Office for Emergency Management			9.15
For Journal of Mathematical Tables: Subscriptions			435.25
For metallurgical advisory committee (O. S. R. D.):			
Office for Emergency Management	$128,969.76		
*National Academy of Sciences	7,500.00		
			136,469.76
For committee on concrete research:			
Office for Emergency Management	4,079.73		
Council of National Defense	20.06		
			4,099.79
For war metallurgy committee (WPB):			
Office for Emergency Management	76,387.36		
*National Academy of Sciences	5,000.00		
			81,387.36
For Highway Research Board moving expenses: National Academy of Sciences			1,100.00
For Quartermaster Corps problems: *National Academy of Sciences			5,000.00
For committee on eutectic diagrams: Office for Emergency Management			134.64
For N. T. M. project: Office for Emergency Management			752.22
For special medical committees, Carnegie Corporation: Office for Emergency Management			541.66
For committees on military medicine, revolving fund: Office for Emergency Management			121,874.87
For committee on materials in medicine and surgery:			
Office for Emergency Management	$17,200.03		
National Research Council	3,000.00		
			20,200.03
For medical food requirements: *National Academy of Sciences			6,000.00
For National Live Stock and Meat Board fellowships: National Live Stock and Meat Board			19,300.00
For Food and Nutrition Board:			
Federal Security Agency	$46,145.92		
*National Academy of Sciences	6,000.00		
Nutrition Foundation fund	5,000.00		
			57,145.92
For Nutrition Foundation fund:			
The Nutrition Foundation, Inc	5,000.00		
Food and Nutrition Board	5,000.00		
			10,000.00

(11) From various organizations—Continued.

For committee on food composition:		
War Department	$1, 644. 68	
*National Academy of Sciences	5, 000. 00	
		$6, 644. 68
For Milbank Memorial fund: Milbank Memorial Fund		12, 000. 00
For joint committee on forestry: General Education Board		2, 500. 00
For national intelligence tests, 1921: World Book Co.—royalties		358. 06
For Child Development Abstracts: Subscriptions		3, 315. 30
For committee on food habits:		
Federal Security Agency	$20, 458. 12	
*National Academy of Sciences	4, 000. 00	
		24, 458. 12
For perceptual investigations: Office for Emergency Management		2, 069. 40
For committee on service personnel—selection and training:		
Office for Emergency Management	$82, 417. 43	
*National Academy of Sciences	3, 500. 00	
Perceptual investigations	2, 850. 00	
Central purposes fund	1, 500. 00	
		90, 267. 43
For office of psychological personnel:		
Society for Psychological Study of Social Studies	25. 00	
American Association for Applied Psychology, Inc	1, 000. 00	
Samuel W. Fernberger	100. 00	
		1, 125. 00
For role of different containers in food habits; Cup and Container Institute		500. 00
For milk in American culture: Evaporated Milk Association		350. 00
For intersociety convention of psychologists: Samuel S. Fels		250. 00
For CAA—war training service: *National Academy of Sciences		4. 000. 00
For Annual Tables:		
California Institute of Technology	$200. 00	
General Electric Co	500. 00	
Research Laboratories Division, General Motors	250. 00	
American Brass Co	50. 00	
American Rolling Mill Co	50. 00	
Bausch & Lomb Optical Co	50. 00	
B. Pregel	100. 00	
Eastman Kodak Co	500. 00	
E. I. duPont de Nemours & Co	500. 00	
Procter & Gamble Co	100. 00	
Commercial Solvents Corporation	100. 00	
Hercules Powder Co	100. 00	
Anaconda Wire & Cable Co	100. 00	
Victor Chemical Works	50. 00	
The Epply Laboratory, Inc	50. 00	
Taylor Instrument Companies	20. 00	
The Martin Dennis Co	100. 00	
Mellon Institute of Industrial Research	100. 00	
Sun Oil Co	100. 00	

(11) From various organizations—Continued.		
B. F. Goodrich Co	$100. 00	
Shell Development Co	500. 00	
International Nickel Co., Inc	150. 00	
Aluminum Co. of America	100. 00	
Röhm & Hass Co	100. 00	
Goodyear Tire & Rubber Co	100. 00	
St. Joseph Lead Co	35. 00	
Bell Telephone Laboratories, Inc	500. 00	
Vanadium Corporation of America	50. 00	
Standard Oil Development Co	100. 00	
Carnegie Institution of Washington	3, 000. 00	
		$7, 755. 00
For committee on passive protection against bombing: War Department		144, 099. 13
For committee on braking: Office for Emergency Management		10, 833. 22
For advisory office for scientific and technical personnel: Office for Emergency Management		33, 064. 62
For committee on research laboratory priorities: Office for Emergency Management		389. 30
For Ethnogeographic Board joint fund:		
American Council of Learned Societies	$1, 500. 00	
Carnegie Corporation of New York	20, 000. 00	
Rockefeller Foundation	10, 000. 00	
		31, 500. 00
For committee on war use of research facilities: Office for Emergency Management		7, 200. 00
For bibliographic service to Central and South America: Office for Emergency Management		21, 630. 00
For survey of schools for osteopathy: *National Academy of Sciences		3, 000. 00
Total receipts from all sources		1, 587, 244. 75

Balance sheet, National Research Council, as of June 30, 1943

ASSETS

Total book value of securities held	$152, 433. 01
Cash in banks June 30, 1943	510, 040. 77
Due from Bank of New York	889. 80
Income receivable as shown under column "Budget balance"—receipts (p. 84)	139, 000. 00
National Academy of Sciences special, Advances from various funds	8, 000. 00
Property account—equipment at cost	53, 473. 49
Total	863, 837. 07

LIABILITIES

Current liabilities:		
Division appropriations as shown under column "Budget balance"—disbursements (p. 87)		$728, 072. 39
Unappropriated fund, general		51, 491. 34
National Academy of Sciences, special	$10, 000. 00	
Less due from National Academy of Sciences	. 80	
		9, 999. 20
International Critical Tables: Capital funds		20, 800. 65
Capital invested in property		53, 473. 49
Total		863, 837. 07

ASSETS

[Securities purchased during the fiscal year 1942–43, are indicated thus (*)]

Securities	Face value	Book value	Market value June 30, 1943
Railroad bonds:			
General maintenance fund:			
Baltimore & Ohio 5's, 1995	$8,000.00	$6,530.00	$3,380.00
Cleveland, Cincinnati, Chicago & St. Louis 4½'s, 1977	10,000.00	9,650.00	5,712.50
Great Northern 3¾'s, 1967	10,000.00	9,525.00	8,987.50
Gulf, Mobile & Ohio* 4's, 1975	10,000.00	7,322.61	9,425.00
Lehigh Valley* 4½'s, 1950	10,000.00	6,020.00	7,100.00
Nashville, Chattanooga & St. Louis* 4's, 1978	10,000.00	6,987.50	7,925.00
New York, Lackawanna & Western* 4's, 1973	8,000.00	5,505.06	5,840.00
International Critical Tables:			
Baltimore & Ohio, Pittsburgh, Lake Erie & West Virginia System* 4's, 1951	10,000.00	5,562.50	6,500.00
New York, Lackawanna & Western* 4's, 1973	2,000.00	1,445.00	1,460.00
Total railroad bonds	78,000.00	58,547.67	56,330.00
Industrial bonds:			
General maintenance fund:			
United Drug* 5's, 1953	1,000.00	960.00	1,028.75
International Critical Tables:			
United Drug* 5's, 1953	1,000.00	960.00	1,028.75
Total industrial bonds	2,000.00	1,920.00	2,057.50
Foreign government bonds:			
General maintenance fund:			
Kingdom of Norway 4¼'s, 1965	9,000.00	9,007.50	8,032.50
International Critical Tables:			
Kingdom of Norway 4¼'s, 1965	5,000.00	5,101.25	4,462.50
Total foreign government bonds	14,000.00	14,108.75	12,495.00
	No. of shares	Book value	Market value June 30, 1943
Common stocks:			
General maintenance fund:			
Anaconda Copper	100	2,840.00	2,762.50
Central Aguirre Associates	150	3,228.75	3,243.75
Commercial Credit*	100	2,243.06	4,050.00
Commercial Investment Trust*	30	808.26	1,286.25
Commonwealth Edison	200	4,455.00	4,975.00
Detroit Edison*	100	1,879.66	2,000.00
Liquid Carbonic	200	2,678.00	4,125.00
Standard Oil of New Jersey	100	4,320.00	5,812.50
Tybor Stores, Inc.*	150	75.00	63.75
International Critical Tables:			
Anaconda Copper	100	2,840.00	2,762.50
Central Aguirre Associates	50	1,076.25	1,081.25
Commercial Investment Trust*	70	1,885.93	3,001.25
Detroit Edison*	100	1,904.72	2,000.00
Tybor Stores, Inc.*	50	25.00	21.25
Total common stocks	1,500	30,259.63	37,185.00
Preferred stocks:			
General maintenance fund:			
Crane*	100	10,457.50	10,587.50
Goodyear Tire & Rubber*	70	7,044.95	7,175.00
Total preferred stocks	170	17,502.45	17,762.50
Total common and preferred stocks	1,670	47,762.08	54,947.50
	Face value	Book value	Market value June 30, 1943
Mortgage notes (secured by first mortgage on real estate)	[1] $5,094.51	5,094.51	[1] 5,094.51
Real estate	25,000.00	25,000.00	[1] 25,000.00
Total real estate and mortgages	30,094.51	30,094.51	30,094.51
Total securities, including common and preferred stocks		152,433.01	155,924.51

[1] No market available.

Receipts and disbursements, National Research Council, from July 1, 1942, to June 30, 1943

RECEIPTS

Appropriation	Received during year	Previously reported	Transfers and other credits	Budget	Budget balance, June 30, 1943
Rockefeller Foundation:					
National research fellowships in the natural sciences (RF 39103), 1942	$27,566.78	$32,433.22		$60,000.00	
National research fellowships in the natural sciences (RF 39103), 1943	12,000.00			60,000.00	$48,000.00
Research fellowships in medicine (RF 40056), 1942	14,553.68	20,446.32		35,000.00	
Research fellowships in medicine (RF 40056), 1943				35,000.00	35,000.00
Sex research fund (RF 41011), 1943	46,243.80			46,243.80	
Central purposes fund, 1943	35,000.00		$37,628.95	72,628.95	
Rotating fund, physics committees	1,554.87		3,648.89	5,203.76	
Revolving fund for publication of mathematical books		6,479.81	280.61	6,760.42	
Revolving fund for publication of mathematical tables (RF 40060)	76.00	15,516.33		15,592.33	
Committee on sound control in vehicles	26,981.92	21,972.98	2,032.72	50,987.62	
Committee on optical plastics	9.15	2,063.14		2,072.29	
Journal of mathematical tables	985.25			985.25	
Highway Research Board, 1942	1,666.67	38,260.26		39,926.93	
Highway Research Board, 1943	26,880.62		7,795.57	34,676.19	
Industrial Research Institute	11,510.00	5,507.92	.50	17,018.42	
Metallurgical advisory committee (O. S. R. D.)	136,469.76	6,741.42	105.55	143,316.73	
War metallurgy committee (WPB)	81,387.36			81,387.36	
Committee on concrete research	4,090.79	1,142.62	178.99	5,421.40	
Highway Research Board moving expenses	1,100.00			1,100.00	
Quartermaster Corps problems	5,000.00			5,000.00	
Committee on eutectic diagrams	134.64	365.36		500.00	
Committee on catalysis	57.50	278.00		335.50	
N. T. M. project	752.22	247.78	.75	1,000.75	
Research fund, committee on sedimentation	187.39	929.08		1,116.47	
Ore deposits as related to structural features	200.24	692.65	8.03	900.92	
Committee on endocrinology, 1943	34,225.99	7,704.31	459.89	42,390.19	
Special medical committees, Carnegie Corporation	541.66	8,170.45		8,712.11	
Expenses, committees on military medicine	50.00		1,413.91	1,463.91	
Projects, committees on military medicine		64.00	6,103.06	6,167.06	
Committees on military medicine, revolving fund	121,874.87	38,541.96	6,237.05	166,653.88	
Committee on materials in medicine and surgery	20,200.03			20,200.03	
Tropical medicine lectures	15,000.00		11.90	15,011.90	
Military medicine, information service	17,000.00		20.00	17,020.00	
Tropical disease book fund	4,000.00			4,000.00	
Medical food requirements	6,000.00			6,000.00	
Committee on animal nutrition	129.00	228.06		357.06	
National Live Stock and Meat Board fellowships	19,300.00	3,124.51	.73	22,425.24	
Food and nutrition board	57,145.92	105.88	10.28	57,262.08	
Nutrition Foundation fund	5,000.00	5,000.00	5,083.23	15,083.23	
Committee on food composition	6,644.68		148.02	6,792.70	
Milbank Memorial fund	12,000.00			12,000.00	
Committee on nutritional aspects of ageing	10,500.00			10,500.00	
Office of executive secretary, division of biology and agriculture	10,000.00			10,000.00	
Joint committee on forestry	2,500.00			2,500.00	
National intelligence tests, 1921	1,321.06	3,475.35	.53	4,796.94	
Child Development Abstracts	3,315.30	1,979.71		5,295.01	
Psychosomatic Medicine	1,216.50	2,774.24		3,990.74	
Aircraft pilots, 1942	13,700.00	40,120.18	4,512.21	58,332.39	
Aircraft pilots, 1943	112,500.00		366.62	112,866.62	
Committee on food habits	24,473.27	2,000.30		26,473.57	
Perceptual investigations	2,069.40	1,140.57		3,209.97	
Publications, Psychosomatic Medicine	1,547.37	3,000.00		4,547.37	
Committee on service personnel—selection and training	88,767.43		1,710.95	90,478.38	
Office of psychological personnel	10,475.00			10,475.00	
Obesity and allergy in childhood	3,700.00			3,700.00	
Role of different containers in food habits	500.00			500.00	
CAA—national training service	80,467.49			80,467.49	

Receipts and disbursements, National Research Council, from July 1, 1942, to June 30, 1943—Continued

RECEIPTS—Continued

Appropriation	Received during year	Previously reported	Transfers and other credits	Budget	Budget balance, June 30, 1943
Milk in American culture	$350.00			$350.00	
Textbook in military psychology fund	480.00		$963.00	1,443.00	
Intersociety convention of psychologists	250.00			250.00	
CAA—war training service	4,000.00			4,000.00	
General maintenance executive board, 1943	700.00		2,500.00	3,200.00	
International Critical Tables	85.56	$890.47	12,959.30	13,935.33	
Royalty account, International Critical Tables	2,809.50	65,405.84		68,215.34	
Annual tables	11,529.59	12,454.95		23,984.54	
Committee on passive protection against bombing	144,099.13	3,094.22	1,571.16	148,764.51	
Subcommittee on individual hearing aids	10,000.00	6,031.16	400.00	16,431.16	
Committee on braking	10,833.22	1,795.21		12,628.43	
Advisory office for scientific and technical personnel	33,064.62	2,411.84	53.13	35,529.59	
Committee on research laboratory priorities	389.30	1,751.75		2,141.05	
Ethnogeographic Board joint fund	31,500.00	3,000.00	500.00	35,000.00	
Committee on war use of research facilities	7,200.00		15.03	7,215.03	
Victory tax withheld account	8,481.36			8,481.36	
Bibliographic service to Central and South America	21,630.00			21,630.00	
Survey of schools for osteopathy	3,000.00			3,000.00	
Fire resistance of materials	900.00			900.00	
Thermal investigations	1,050.25	1,647.84		2,698.09	
Ignition research	3,250.00	3,241.24	4.94	6,496.18	
Construction of high precision standards	1,327.00	959.25		2,286.25	
Investigation of high-strength reinforcement of concrete	5,000.00			5,000.00	
Motion picture projection equipment		1,612.70	164.00	1,776.70	
Expected reimbursement from Government on account of overhead	20,000.00			76,000.00	$56,000.00
Carnegie endowment fund	64,805.54		194.46	65,000.00	
Total	1,507,317.68	374,802.88	97,083.96	2,118,204.52	139,000.00
Sale of bonds	212.72				
Interest on bonds	3,270.47				
Miscellaneous receipts	12,858.74				
Reimbursements	63,585.14				
Total receipts	1,587,244.75				
July 1, 1942, balance in banks	360,454.28				
Grand total	1,947,699.03				

DISBURSEMENTS

Divisions	Disbursed during year	Previously reported	Reversions and other charges	Budget	Budget balance, June 30, 1943
I. Foreign relations: General maintenance, 1943			$300.00	$300.00	
II. Educational relations:					
General maintenance, 1943	$10.00		40.00	50.00	
University research fund	295.80			295.80	
III. Physical sciences:					
General maintenance, 1943	432.98		1,024.48	1,500.00	$42.54
Revolving fund for publication of mathematical books		$5,980.81		6,760.42	779.61
Physics committees, 1932		912.50	587.50	1,500.00	
Rotating fund, physics committees	6.65			5,203.76	5,197.11
Washington Biophysical Institute (RF 37020), 1942	1,904.15	8,889.42		11,930.02	1,136.45
Revolving fund for publication of mathematical tables	400.00	1,352.23		15,592.33	13,840.10
Committee on sound control in vehicles	35,997.44			50,987.62	14,990.18
Committee on optical plastics	1,000.00	1,072.29		2,072.29	
Journal of mathematical tables	464.51			985.25	520.74

Receipts and disbursements, National Research Council, from July 1, 1942, to June 30, 1943—Continued

DISBURSEMENTS—Continued

Divisions	Disbursed during year	Previously reported	Reversions and other charges	Budget	Budget balance, June 30, 1943
IV. Engineering and industrial research:					
General maintenance, 1942	$1,388.79	$5,958.01	$158.55	$7,505.35	
General maintenance, 1943	1,200.76		1,079.24	3,900.00	$1,620.00
Highway Research Board, 1942		32,132.61	7,794.32	39,926.93	
Highway Research Board, 1943	29,764.08			34,676.19	4,912.11
Industrial Research Institute	9,421.84			17,018.42	7,596.58
Metallurgical advisory committee (O. S. R. D.)	124,995.86			143,316.73	18,320.87
Committee on concrete research	4,576.20			5,421.40	845.20
War metallurgy committee (WPB)	57,911.26			81,387.36	23,476.10
Highway Research Board moving expenses	766.77			1,100.00	333.23
Quartermaster Corps problems				5,000.00	5,000.00
Heat transmission				373.75	373.75
V. Chemistry and chemical technology:					
General maintenance, 1942	57.07	943.18		1,000.25	
General maintenance, 1943	689.53		775.70	1,500.25	35.02
Fellowship in protein chemistry				308.89	308.89
Committee on chemical data for ceramists	246.31			649.72	403.41
Committee on catalysis				335.50	335.50
Committee on eutectic diagrams	500.00			500.00	
N. T. M. project	975.42			1,000.75	25.33
VI. Geology and geography:					
General maintenance, 1943	1,773.40		.97	1,887.77	113.40
Research fund, committee on sedimentation				1,116.47	1,116.47
Ore deposits as related to structural features	874.77		26.15	900.92	
VII. Medical sciences:					
General maintenance, 1943	401.34		1,098.66	1,500.00	
Sex research fund, 1942	7,107.36	54,770.06		61,877.42	
Sex research fund, 1943	43,201.83			46,243.80	3,041.97
Fellowships in medicine (RF 40056), 1942	13,366.80	22,133.20		35,500.00	
Fellowships in medicine (RF 40056), 1943	860.30			35,000.00	34,139.70
Committee on endocrinology, 1942		48,022.58	7,704.31	55,726.89	
Committee on endocrinology, 1943	31,578.68			42,390.19	10,811.51
Special medical advisory committees to the Surgeons General of the Army and Navy	164.52	12,661.47		12,825.99	
Fellowships in virus studies and orthopedics, 1941–42	10,334.65			49,155.18	38,820.53
Special medical committees, Carnegie Corporation	876.93			8,712.11	7,835.18
War neurosis fund				307.90	307.90
Expenses, committees on military medicine				1,463.91	1,463.91
Welch fellowships (RF 41028)	623.32			3,799.83	3,176.51
Projects, committees on military medicine				6,167.06	6,167.06
Committees on military medicine, revolving fund	146,367.24			166,653.88	20,286.64
Drugs and medical supplies	2,000.00			2,000.00	
Committee on materials in medicine and surgery	16,157.27			20,200.03	4,042.76
Tropical medicine lectures	6,469.88			15,011.90	8,542.02
Military medicine, information service	3,703.78			17,020.00	13,316.22
Tropical disease book fund	1,184.38			4,000.00	2,815.62
Medical food requirements	2,093.62			6,000.00	3,906.38

Receipts and disbursements, National Research Council, from July 1, 1942, to June 30, 1943—Continued

DISBURSEMENTS—Continued

Divisions	Disbursed during year	Previously reported	Reversions and other charges	Budget	Budget balance, June 30, 1943
VIII. Biology and agriculture:					
General maintenance, 1942	$81.42	$1,145.63	$72.95	$1,300.00	
General maintenance, 1943	1,491.71		8.29	1,500.00	
Committee on animal nutrition	347.21			357.06	$9.85
National Live Stock and Meat Board fellowships	16,099.30			22,425.24	6,325.94
Pharmaceutical researches	165.80			416.53	250.73
Committee on human heredity	8,736.01			14,545.04	5,809.03
Committee on aerobiology	224.70			1,688.88	1,464.18
Radiation bulletins				25.10	25.10
Committee on preservation of natural conditions				112.85	112.85
RCA fellowship	683.33			683.33	
Food and Nutrition Board	54,136.90			57,262.08	3,125.18
Nutrition Foundation fund	9,131.32			15,083.23	5,951.91
Committee on food composition	6,724.13			6,792.70	68.57
Milbank Memorial Fund	5,165.18			12,000.00	6,834.82
Committee on nutritional aspects of ageing	4,691.95			10,500.00	5,808.05
Office of executive secretary, division of biology and agriculture	4,041.21			10,000.00	5,958.79
Joint committee on forestry	545.08			2,500.00	1,954.92
IX. Anthropology and psychology:					
General maintenance, 1943	868.02		629.47	1,500.00	2.51
National intelligence tests, 1921	691.69		963.00	4,796.94	3,142.25
Child Development Abstracts	3,223.23			5,295.01	2,071.78
Directory of anthropologists				122.69	122.69
Psychosomatic medicine	2,119.65			3,990.74	1,871.09
Aircraft pilots, 1941	6,268.63			6,268.63	
Aircraft pilots, 1942	50,872.01			58,332.39	7,460.38
Aircraft pilots, 1943	57,006.09			112,866.62	55,860.53
Improved personality tests	1.08			19.33	18.25
Psychological techniques for military service	391.80			1,118.65	726.85
Support, division of anthropology and psychology				27.67	27.67
Committee on food habits	24,575.09			26,473.57	1,898.48
Perceptual investigations	3,059.97			3,209.97	150.00
Publications, psychosomatic medicine	2,022.12			4,547.37	2,525.25
Committee on service personnel—selection and training	68,324.52			90,478.38	22,153.86
Office of psychological personnel	8,969.89			10,475.00	1,505.11
Obesity and allergy in childhood	3,700.00			3,700.00	
Role of different containers in food habits	500.00			500.00	
CAA—National testing service	78,468.51			80,467.49	1,998.98
Milk in American culture	350.00			350.00	
Textbook in military psychology fund	2.28			1,443.00	1,440.72
Intersociety convention of psychologists				250.00	250.00
CAA—War training service	2,820.99			4,000.00	1,179.01
Expenses and supplies, 1942	965.75	8,650.01	25.85	9,641.61	
Expenses and supplies, 1943	16,123.33		436.22	17,417.73	858.18
New equipment, general, 1942	612.35	3,356.95	30.70	4,000.00	
New equipment, general, 1943	1,482.76			2,500.00	1,017.24
Salaries, 1942	757.07	88,845.18	971.75	90,574.00	
Salaries, 1943	107,501.08		16,746.42	124,282.00	34.50
Telephone and telegraph, 1942	1,159.97	4,300.10		5,460.07	
Telephone and telegraph, 1943	11,228.35			12,621.41	1,393.06
Executive Board:					
General maintenance, 1942	21.85	1,496.00		1,517.85	
General maintenance, 1943	2,193.91		1,006.09	3,200.00	
American Geophysical Union: General maintenance, 1943	400.00			400.00	
Publications and publicity:					
General maintenance, 1942	404.03	4,875.00	20.97	5,300.00	
General maintenance, 1943	1,001.75		2,180.69	4,000.00	817.56
National Academy Proceedings and subscriptions, 1943	2,500.00			2,500.00	
International Critical Tables	.12		13,454.60	13,935.33	480.61
Royalty account, International Critical Tables		65,405.84	2,809.50	68,215.34	

Receipts and disbursements, National Research Council, from July 1, 1942, to June 30, 1943—Continued

DISBURSEMENTS—Continued

Divisions	Disbursed during year	Previously reported	Reversions and other charges	Budget	Budget balance, June 30, 1943
Executive Board—Continued.					
Annual Tables	$9,562.06			$23,984.54	$14,422.48
Auditor's fees, 1942	500.00			500.00	
Attorney's fees, 1943	3,226.00			3,500.00	274.00
Research aid funds, refunds	629.01			629.01	
Retirement fund (approximately 5 percent of appropriations for salaries)				20,500.00	20,500.00
Committee on scientific aids to learning: Support	11,025.22			11,025.22	
Committee on scientific aids to learning: Projects	21,951.24			77,888.60	55,937.36
Committee on passive protection against bombing	118,604.57			148,764.51	30,159.94
Food committees				139.12	139.12
Subcommittee on individual hearing aids	7,320.58			16,431.16	9,110.58
Subcommittee on group hearing aids	1,811.01			4,963.35	3,152.34
Committee on braking	8,280.42			12,628.43	4,348.01
Advisory office for scientific and technical personnel	31,432.08			35,529.59	4,097.51
Committee on research laboratory priorities	2,141.05			2,141.05	
Special administrative funds	362.07	$2,444.93		2,807.00	
Ethnogeographic board joint fund	6,657.67			35,000.00	28,342.33
Central purposes fund, 1943	13,001.44		$22,500.00	72,628.95	37,127.51
Investigations on palmetto fiber	153.97			500.00	346.03
Committee on war use of research facilities	4,962.96			7,215.03	2,252.07
Victory tax withhheld account	4,108.23			8,481.36	4,373.13
Bibliographic service to Central and South America	570.99			21,630.00	21,059.01
Survey of schools for osteopathy	1,775.23			3,000.00	1,224.77
Fellowships in the natural sciences (RF 39103), 1942	36,866.03	23,815.91		60,681.94	
Fellowships in the natural sciences (RF 39103), 1943	3,403.41			60,000.00	56,596.59
Problems of refrigeration				677.37	677.37
Impermanency of records				158.11	158.11
Acoustic properties of materials	146.51			1,279.20	1,132.69
Thermal properties of liquids	1,634.20			3,343.33	1,709.13
Fire resistance of materials	720.63			900.00	179.37
Current meter investigations				126.62	126.62
Thermal investigations	616.21			2,698.09	2,081.88
Ignition research	3,248.75			6,496.18	3,247.43
Acidity of citrus fruits				8.44	8.44
Motion picture projection equipment				1,776.70	1,776.70
Construction of high precision standards	60.16		164.00	2,286.25	2,062.09
Experimental optical glass				400.00	400.00
Investigations on stainless steel sheets	294.92			3,986.75	3,691.83
Investigation of high-strength reinforcement of concrete				5,000.00	5,000.00
Reference library service:					
General maintenance, library, 1942	7.15	4,934.03	58.82	5,000.00	
General maintenance, library, 1943	664.89		4,681.28	5,420.00	73.83
Book fund, reference library service	631.12			1,666.27	1,035.15
Investment reserve fund	1,289.05		18,877.90	18,712.94	dr.1,454.01
Total	1,432,657.46	404,097.94	106,228.38	2,671,056.17	728,072.39
Purchase of securities	5,000.00				
Total disbursements	1,437,657.46				
Balance in banks June 30, 1943:					
Riggs National Bank:					
National Academy of Sciences, special $9,999.20					
Plus amount not reimbursed by National Academy of Sciences .80					
10,000.00					
National Research Council 500,041.57	510,041.57				
Grand total	1,947,699.03				

July 31, 1943.

JEROME C. HUNSAKER, *Treasurer.*

APPENDIX B

NATIONAL RESEARCH COUNCIL

1. EXECUTIVE ORDER ISSUED BY THE PRESIDENT OF THE UNITED STATES, MAY 11, 1918

The National Research Council was organized in 1916 at the request of the President by the National Academy of Sciences, under its congressional charter, as a measure of national preparedness. The work accomplished by the Council in organizing research and in securing cooperation of military and civilian agencies in the solution of military problems demonstrates its capacity for larger service. The National Academy of Sciences is therefore requested to perpetuate the National Research Council, the duties of which shall be as follows:

1. In general, to stimulate research in the mathematical, physical, and biological sciences, and in the application of these sciences to engineering, agriculture, medicine, and other useful arts, with the object of increasing knowledge, of strengthening the national defense, and of contributing in other ways to the public welfare.

2. To survey the larger possibilities of science, to formulate comprehensive projects of research, and to develop effective means of utilizing the scientific and technical resources of the country for dealing with these projects.

3. To promote cooperation in research, at home and abroad, in order to secure concentration of effort, minimize duplication, and stimulate progress; but in all cooperative undertakings to give encouragement to individual initiative, as fundamentally important to the advancement of science.

4. To serve as a means of bringing American and foreign investigators into active cooperation with the scientific and technical services of the War and Navy Departments and with those of the civil branches of the Government.

5. To direct the attention of scientific and technical investigators to the present importance of military and industrial problems in connection with the war, and to aid in the solution of these problems by organizing specific researches.

6. To gather and collate scientific and technical information, at home and abroad, in cooperation with governmental and other agencies, and to render such information available to duly accredited persons.

Effective prosecution of the Council's work requires the cordial collaboration of the scientific and technical branches of the Government, both military and civil. To this end representatives of the Government, upon the nomination of the National Academy of Sciences, will be designated by the President as members of the Council, as heretofore, and the heads of the departments immediately concerned will continue to cooperate in every way that may be required.

WOODROW WILSON.

THE WHITE HOUSE, *May 11, 1918.*

(No. 2859)

2. ARTICLES OF ORGANIZATION, NATIONAL RESEARCH COUNCIL

PREAMBLE

The National Academy of Sciences, under the authority conferred upon it by its charter enacted by the Congress, and approved by President Lincoln on March 3, 1863, and pursuant to the request expressed in an Executive order made by President Wilson on May 11, 1918, adopts the following Articles of Organization for the National Research Council, to replace the organization under which it has operated heretofore.

ARTICLE I—PURPOSE

It shall be the purpose of the National Research Council to promote research in the mathematical, physical, and biological sciences, and in the application of these sciences to engineering, agriculture, medicine, and other useful arts, with the object of increasing knowledge, of strengthening the national defense, and of contributing in other ways to the public welfare, as expressed in the Executive order of May 11, 1918.

ARTICLE II—MEMBERSHIP

SECTION 1. The membership of the National Research Council shall be chosen with the view of rendering the Council an effective federation of the principal research agencies in the United States concerned with the fields of science and technology named in Article I.

SEC. 2. The Council shall be composed of—

1. Representatives of national scientific and technical societies.
2. Representatives of the Government, as provided in the Executive order.
3. Representatives of other research organizations and other persons whose aid may advance the objects of the Council.

SEC. 3. The membership of the Council shall consist specifically of the members of the executive board and the members of the divisions, constituted as provided in articles III and IV.

SEC. 4. Membership in the Council shall be limited to citizens of the United States. This, however, shall not be construed as applying to membership in committees, appointed by or acting under the Council, whose members are not necessarily members of the Council, provided that members not citizens of the United States shall in no case form a majority of any committee.

ARTICLE III—DIVISIONS

SECTION 1. The Council shall be organized in divisions of two classes:

A. Divisions dealing with the more general relations and activities of the Council.

B. Divisions dealing with special branches of science and technology.

SEC. 2. The divisions of the Council shall be as follows:

A. Divisions of general relations:

I. Division of foreign relations.
II. Division of educational relations.

B. Divisions of science and technology:

III. Division of physical sciences.
IV. Division of engineering and industrial research.
V. Division of chemistry and chemical technology.
VI. Division of geology and geography.
VII. Division of medical sciences.
VIII. Division of biology and agriculture.
IX. Division of anthropology and psychology.

SEC. 3. The number of divisions and the grouping of subjects in article III, section 2, may be modified by the executive board of the National Research Council.

SEC. 4 (*a*). Each division of general relations shall consist of a chairman, one or more vice chairmen, representatives of the Government and of national and international organizations, and members at large, appointed as provided in article VI.

(*b*) There may be an executive committee of each division of general relations, consisting of the chairman and three or more of the members, who shall be chosen by the division at a regular meeting, confirmed by the executive board, and hold office for 1 year terminating on June 30 or, in case of any one or more of such executive committees, on such later date as the chairman of the Council may have previously ordered. Between meetings of a division its executive committee shall have power to act on all matters for the division, except those which may be reserved by the division for its own action; but the executive committee shall report all its actions to the division.

SEC. 5 (*a*). Each division of science and technology shall consist of a chairman and of representatives of the Government and of such national societies as seem essential for the conduct of the business of the division appointed as provided in article VI. Members at large may also be appointed as provided in article VI.

(*b*) There may be an executive committee of each division of science and technology, consisting of the chairman and three or more of the members, who shall be chosen by the division at a regular meeting, confirmed by the executive board, and hold office for 1 year terminating on June 30, or, in the case of any one or more of such executive committees, on such later date as the chairman of the Council may have previously ordered. Between meetings of a division its executive committee shall have power to act on all matters for the division except those which may be reserved by the division for its own action; but the executive committee shall report all its actions to the division.

(*c*) The terms of office of the chairmen of the divisions of science and technology, other than that of engineering and industrial research, shall be so arranged by the chairman of the Council that one-third of these terms expire each year.

SEC. 6. The chairman of each division shall be ex officio a member of all committees of the division.

SEC. 7. Actions by the division involving matters of policy shall be subject to approval by the executive board.

ARTICLE IV—ADMINISTRATION

SECTION 1. The general officers of the National Research Council shall be a chairman, chosen as provided in article V, section 1; a treasurer (see art. V, sec. 3); and such honorary officers as may be appointed by the Council of the National Academy of Sciences, upon nomination by the executive board.

SEC. 2. The affairs of the National Research Council shall be administered by an executive board and its administrative committee. Actions by these bodies involving financial responsibilities or the appointment of general officers must be approved by the Council of the National Academy of Sciences, or by the executive committee of the Council of the National Academy of Sciences under general authority, or under such special authority as may be conferred on it by the Council of the National Academy of Sciences.

SEC. 3. The executive board shall consist of the members of the executive committee of the Council of the National Academy of Sciences; the chairman, treasurer, and honorary officers of the National Research Council; the chairmen of the divisions of general relations and of the divisions of science and technology of the National Research Council; the members of the committee on policies; the president or other representative of the American Association for the Advancement of Science; the chairman or other representative of the Engineering Foundation; and six members at large appointed for a term of 3 years, or for an unexpired term in case of vacancy, by the president of the National Academy of Sciences, on recommendation of the executive board. The president of the National Academy of Sciences shall preside at the meetings of the executive board.

SEC. 4. In administrative matters the executive board shall be represented by an administrative committee, which shall consist of the chairman and treasurer of the National Research Council, the president, vice president, and home secretary of the National Academy, and the chairmen of the divisions of the National Research Council.

SEC. 5. The administrative committee shall have power to act upon all matters except those which may be reserved by the executive board for its own action; but the administrative committee shall report all its actions to the executive board. The administrative committee shall prepare the annual budget for submission to the executive board at its annual meeting.

SEC. 6. (*a*) There shall also be a committee on policies of the National Research Council. This committee shall be composed of the president of the National Academy of Sciences, and nine members appointed for terms of 3 years by the executive board, preferably so that it may consist largely of persons who have had past experience in the affairs of the National Research Council. The executive board shall appoint the chairman of the committee on policies to serve for 1 year beginning July 1 or until his successor is appointed. This committee shall submit to the executive board recommendations as to general policies.

(*b*) At the annual meeting of the executive board in 1933, nine members of the committee on policies shall be appointed; three to serve for 1 year, three for 2 years, and three for 3 years, their respective terms to be determined by lot. Each year thereafter the terms of three members will expire, and their successors, to serve for 3 years each, shall be appointed at the annual meeting of the executive board in that year. The date of expiration of the term shall be June 30. In case of vacancy the executive board may fill the unexpired term by appointment.

ARTICLE V—APPOINTMENT AND DUTIES OF OFFICERS OF THE RESEARCH COUNCIL

SECTION 1. The chairman of the National Research Council shall be appointed by the executive board, subject to confirmation by the Council of the National Academy of Sciences, and shall hold office at the pleasure of the board. The chairman shall be the executive officer of the National Research Council and shall have charge of its general administration. He shall act as chairman of its administrative committee, and shall be, ex officio, a member of all divisions and committees of the Council.

SEC. 2. There shall be appointed by the executive board, upon recommendation of the chairman of the National Research Council, an officer with the title of executive secretary of the Council, whose duties it shall be to assist the chairman in the administration of the Council. He shall attend all meetings of the executive board and of the administrative committee, and act as their secretary, and shall hold office at the pleasure of the board.

SEC. 3. The treasurer of the National Academy of Sciences shall be, ex officio, treasurer of the National Research Council.

SEC. 4. In case of a vacancy in the office of the chairman of the National Research Council or of the absence or disability of the chairman an acting chairman may be appointed by the Council of the National Academy of Sciences, or by the executive committee of the Council of the National Academy, upon recommendation of the executive board of the Research Council or its administrative committee.

ARTICLE VI—NOMINATION AND APPOINTMENT OF OFFICERS AND MEMBERS OF DIVISIONS

SECTION 1. *Divisions of science and technology.*—(*a*) The chairman of each division shall be nominated to the executive board by the division concerned, with the approval of the administrative committee. The chairman shall be appointed by the executive board at its annual meeting for a term of 3 years.

(*b*) The national societies to be represented in each of the divisions shall be determined by the division concerned, subject to the approval of the executive board.

(*c*) The representatives of national societies in each division shall be nominated by the societies, at the request of the chairman of the division, and, after approval by the executive board, shall be appointed by the President of the National Academy of Sciences to membership in the National Research Council for a term of 3 years, and assigned to the division.

(*d*) Members at large, if any, in each division shall be nominated by the division concerned, with the approval of the executive board, and shall be appointed by the president of the National Academy of Sciences to membership in the National Research Council for a term of 3 years, and assigned to the division.

SEC. 2. *Divisions of general relations.*—(*a*) The officers of each of the divisions of general relations shall be appointed by the executive board to serve for a period of 3 years, except that the foreign secretary of the National Academy of Sciences shall be, ex officio, chairman of the division of foreign relations.

(*b*) The national and international societies or associations to be represented in each of these divisions shall be determined by the division concerned, subject to the approval of the executive board.

(*c*) The representatives of such societies or associations shall be nominated by the societies or associations, at the request of the chairman of the division, and, after approval by the executive board, shall be appointed by the president of the National Academy of Sciencies to membership in the Council for a period of 3 years, and assigned to the division.

(*d*) Members at large in each division shall be nominated by the division, approved by the executive board, and appointed by the president of the National Academy of Sciences to membership in the Council for a period of 3 years, and assigned to the division.

SEC. 3. The Government bureaus, civil and military, to be represented in the divisions of the Council shall be determined by the Council of the National Academy of Sciences, on recommendation from the executive board of the National Research Council.

SEC. 4. The representatives of the Government shall be selected by the secretaries of the departments concerned, after conference with the chairman of the National Research Council, and the names of those thus proposed shall be presented to the president of the National Academy of Sciencies to be nominated by him to the President of the United States for designation for service with the National Research Council. Each Government representative shall serve during the pleasure of the President of the United States, not to exceed a term of 3 years, and a vacancy from any cause shall be filled for the remainder of the term in the same manner as in the case of the original designation.

SEC. 5. The terms of office of officers and members, unless otherwise provided, shall terminate on June 30 of the year in which their appointments expire.

SEC. 6. Vacancies occurring in the divisions of either class, except as to representatives of the Government, may be filled for the unexpired term by the executive board, upon recommendation of the division concerned, or ad interim by the administrative committee upon similar recommendation.

Article VII—Meetings

Section 1. The annual meeting of the executive board shall be held in April in the city of Washington at the time of the meeting of the National Academy of Sciences. Special meetings may be held at other times at the call of the chairman of the National Research Council. A majority of the members of the board shall constitute a quorum for the transaction of business.

Sec. 2. Stated meetings of the administrative committee shall be held in the city of Washington at least five times a year, at such dates as shall be determined by the chairman of the National Research Council. Special meetings may be held at other times on call of the chairman. Five members of the committee shall constitute a quorum for the transaction of business.

Sec. 3. The committee on policies shall hold one stated meeting during the year, preferably in Washington at the time of the annual meeting of the National Academy of Sciences. Special meetings may be held at any time on call of the chairman of the committee. Five members of the committee shall constitute a quorum for the transaction of business.

Sec. 4. Each division of science and technology shall hold at least one stated meeting during the year, at a time to be determined by the chairman of the division in consultation with the chairman of the Council. Special meetings may be called at other times by the chairman of the division.

Sec. 5. Meetings of any division of general relations shall be held upon the call of its chairman.

Article VIII—Publications and Reports

Section 1. An annual report on the work of the National Research Council shall be presented by the chairman to the National Academy of Sciences.

Sec. 2. Other publications of the National Research Council may include papers, bulletins, reports, and memoirs, which may appear in Proceedings or Memoirs of the National Academy of Sciences, in the publications of other societies, in scientific and technical journals, or in a separate series of the National Research Council.

Article IX—Amendments

Section 1. By action of the National Academy of Sciences, on April 29, 1919, power of amendment of these articles of organization is given to the Council of the National Academy of Sciences.

3. BYLAWS

1. The treasurer shall have the assistance of a salaried and bonded officer, the bursar, who shall be chosen by the finance committee of the National Academy of Sciences and be directly responsible to the treasurer.

2. The executive board may create such other salaried officers as are necessary for the transaction of the business of the Council.

3. Officers of the Council, members of the executive board, and special agents of the Council, when authorized to travel on business of the Council, may be allowed their necessary expenses.

4. Members of the divisions of science and technology and members of the executive committee of any division of general relations, when attending an authorized meeting, may be reimbursed for traveling expenses, or such portion thereof as the division chairman may determine, within the funds made available for that purpose in the budget.

5. The chairman of each division shall direct the administrative and scientific work of the division.

6. In the fiscal year in which the term of office of a chairman of a division expires it shall be his duty to appoint, on or before February 1, a nominating committee of three, chosen from present or former members of the division or from the membership of existing committees of the division, who, in consultation with the chairman of the division and the chairman of the Council, shall select an available candidate for the chairmanship for the ensuing term. The name of the candidate shall be reported to the division through its chairman and, if approved

by the division, shall be recommended to the executive board at its annual meeting for appointment, as provided in article VI, sections 1 and 2, of the articles of organization.

7. Each division of science and technology is empowered to arrange, in accordance with its special needs, for the selection of the members at large of the division, and for an executive committee, to be appointed annually, as provided in article III, section 5 (a) and (b), and article VI, section 1 (d) of the articles of organization.

Each division may designate also one of its members to act as vice chairman of the division, the term of office to be for 1 year.

8. Following the termination of any regular 3-year period of service the chairman or members of a division shall be eligible for reappointment in the same status only after a lapse of 1 year, except that the executive board may continue the service of a chairman or members for a second period of 3 years, or less, when such action is recommended by the division concerned.

9. An annual honorarium may be paid to the chairman of each division of science and technology and an annual maintenance fund shall be appropriated for the support of the work of each division of the Council. The amount of the honorarium and of the maintenance fund of each division shall be determined by the administrative committee, subject to the approval of the executive board and the Council of the National Academy of Sciences or its executive committee.

10. The maintenance fund allotted to each division shall be expended under the authority of the chairman of the division to provide for meetings of the division and its various committees, and other necessary expenses, in accordance with the regulations in force in the Council controlling financial expenditures.

11. No member of a committee constituted to administer funds entrusted to the National Research Council shall receive an honorarium or salary from such funds for his services, except in cases specifically authorized in advance by the executive board or its administrative committee, but members of such committees may be reimbursed from the funds for expenses incurred in the work of the committee.

12. Members of special committees organized within any of the divisions must be approved by the administrative committee before official notification of appointment is made by the chairman of the division.

13. Solicitation of funds for the support of projects of a division may be made only after authorization by both the executive board (or its administrative committee) and the Council of the National Academy of Sciences (or its executive committee). Such solicitation shall be conducted under the direction of the chairman of the National Research Council acting in conjunction with the chairman of the division concerned.

14. Special funds granted to the National Research Council, other than those for fellowships and grants-in-aid, must be expended in accordance with budgets previously approved by the administrative committee.

15. It shall be the duty of the chairman of each division of the Council to submit an annual report of the activities of his division to the chairman of the Council on or before June 30. Interim reports shall be made to the chairman of the Council before each stated meeting of the administrative committee.

16. Standing committees of the executive board, unless otherwise provided for, shall be appointed annually by the board at its April meeting, or, in case of need, by the administrative committee at one of its stated meetings.

17. The executive board, at its annual meeting in April, shall appoint a nominating committee of three members to prepare nominations for presentation at the next annual meeting of the board for vacancies in the committee on policies and in the list of members at large of the board, occurring at the end of the fiscal year.

18. Amendments of bylaws may be made by the executive board at any authorized meeting of the board.

19. A publication to be known as the Bulletin of the National Research Council shall be established to provide for the publication of materials originating in the work of the Council. The Bulletin shall be issued as occasion demands.

20. A series to be known as the Reprint and Circular Series of the National Research Council shall provide for the distribution of papers published or printed by or for the National Research Council.

4. ORGANIZATION OF THE NATIONAL RESEARCH COUNCIL, 1942-43

A. Officers and Executive Board

OFFICERS

Chairman.—Ross G. Harrison, Sterling professor of biology and director of Osborn Zoological Laboratory, emeritus, Yale University, New Haven, Conn.

Treasurer.—Jerome C. Hunsaker, treasurer, National Academy of Sciences; professor in charge of the department of aeronautical engineering, Massachusetts Institute of Technology, Cambridge, Mass.

Executive secretary.—W. H. Kenerson, National Research Council, Washington, D. C.

Business manager.—George D. Meid, National Research Council, Washington, D. C.

Bursar.—J. H. J. Yule, National Research Council, Washington, D. C.

Chief clerk.—C. L. Wade, National Research Council, Washington, D. C.

EXECUTIVE BOARD

Presiding officer.—Frank B. Jewett, president, National Academy of Sciences, ex officio.

MEMBERS EX OFFICIO

Chairman and treasurer of the National Research Council.

Chairmen of the divisions of the National Research Council.

Executive committee of the Council of the National Academy of Sciences

Frank B. Jewett, president, National Academy of Sciences; vice president, American Telephone & Telegraph Co., 195 Broadway, New York City.

Isaiah Bowman, vice president, National Academy of Sciences; president, Johns Hopkins University, Baltimore, Md.

F. E. Wright, home secretary, National Academy of Sciences, 2134 Wyoming Avenue, Washington, D. C.

Ross G. Harrison.

Jerome C. Hunsaker.

W. Mansfield Clark, professor of physiological chemistry, school of medicine, Johns Hopkins University, Baltimore, Md.

A. N. Richards, professor of pharmacology, and vice president in charge of medical affairs, school of medicine, University of Pennsylvania, Philadelphia, Pa.

Committee on policies of the National Research Council

R. A. Millikan, chairman, director, Norman Bridge Laboratory of Physics, and chairman of the executive council, California Institute of Technology, Pasadena, Calif.

Isaiah Bowman, vice chairman.

Vannevar Bush, president, Carnegie Institution of Washington, Washington, D. C.

Karl T. Compton, president, Massachusetts Institute of Technology, Cambridge, Mass.

James B. Conant, president, Harvard University, Cambridge, Mass.

E. G. Conklin, president, American Philosophical Society, Independence Square, Philadelphia, Pa.

Frank B. Jewett, ex officio.

A. N. Richards.

W. J. Robbins, director, New York Botantical Garden, Bronx Park, New York City.

Harlow Shapley, professor of astronomy and director of the observatory, Harvard University, Cambridge, Mass.

REPRESENTATIVES OF ORGANIZATIONS

President of the American Association for the Advancement of Science, Isaiah Bowman.

Representative of the Engineering Foundation, A. L. Queneau, metallurgist, United States Steel Corporation, 71 Broadway, New York City.

MEMBERS AT LARGE

George D. Birkhoff, Perkins professor of mathematics and dean of the faculities of arts and sciences, Harvard University, Cambridge, Mass.

Carl E. Guthe, director of university museums and director, museum of anthropology, University of Michigan, Ann Arbor, Mich.

Walter R. Miles, professor of psychology, school of medicine, Yale University, New Haven, Conn.

Thomas Parran, Surgeon General, United States Public Health Service, Washington, D. C.

W. M. Stanley, member, Rockefeller Institute for Medical Research, Princeton, N. J.

F. W. Willard, president, Nassau Smelting & Refining Co., 170 Fulton Street, New York City.

ADMINISTRATIVE COMMITTEE

The chairman and treasurer of the National Research Council, the president, vice president, and home secretary of the National Academy of Sciences, and the chairmen of the divisions of the Council, including—

Ross G. Harrison, chairman
Isaiah Bowman
Walter H. Bucher
W. B. Cannon
Leonard Carmichael
W. Mansfield Clark
W. F. Durand
L. P. Eisenhart
R. F. Griggs
Jerome C. Hunsaker
Frank B. Jewett
Lewis H. Weed
William Charles White
F. E. Wright

COMMITTEES

The chairman of the National Research Council is, ex officio, a member of all divisions and committees of the Council.

Committee on nominations.—Chairman, E. B. Wilson, professor of vital statistics, Harvard school of public health, Boston, Mass.

Committee on publication and library.—Chairman, Ross G. Harrison.

Advisory committee on buildings and grounds (joint committee with the National Academy of Sciences).—Chairman, Paul Brockett, executive secretary, National Academy of Sciences, Washington, D. C.

Committee on exhibits (joint committee with the National Academy of Sciences).—Chairman, F. E. Wright.

Committee on patent policy.—Chairman Howard A. Poillon, president, Research Corporation, 405 Lexington Avenue, New York City.

TECHNICAL COMMITTEES

Advisory committee on scientific personnel.—Chairman, Henry A. Barton, director, American Institute of Physics, 175 Fifth Avenue, New York City.

Advisory committee on scientific publication.—Chairman, L. P. Eisenhart.

Advisory committee to the Weather Bureau.—Chairman, R. A. Millikan.

Committee on applied mathematical statistics.—Chairman, L. P. Eisenhart.

Subcommittee on biological statistics.—Chairman, Sewall Wright, professor of genetics, University of Chicago, Chicago, Ill.

Subcommittee on chemistry.—Chairman, Hugh M. Smallwood, United States Rubber Co., Eau Claire, Wis.

Subcommittee on economics.—Chairman, Charles F. Roos, Institute of Applied Econometrics, Inc., 500 Fifth Avenue, New York City.

Subcommittee on mathematical statistics.—Chairman, S. S. Wilks, associate professor of mathematics, Princeton University, Princeton, N. J.

Subcommittee on medicine.—Chairman, Lowell J. Reed, professor of biostatics and dean of the school of hygiene and public health, Johns Hopkins University, Baltimore, Md.

Committee on bibliographic service to Central and South America.—Chairman, W. H. Kenerson, executive secretary, National Research Council, Washington, D. C.

Committee on cooperation with Research Corporation.—Chairman, F. G. Cottrell, 3904 Ingomar Street NW., Washington, D. C.

Committee on publication of excerpts from International Critical Tables.—Chairman, Henry A. Barton.

Committee on relationships with the War and Navy Departments.—Chairman, R. A. Millikan.

Committee on scientific aids to learning.—Chairman, James B. Conant.

Advisory committee on visual fatigue.—Chairman, Adelbert Ames, Jr., professor of physiological optics, Dartmouth College, Hanover, N. H.

Committee on study of schools of osteopathy.—Edwin G. Conklin, L. C. Dunn, Edward C. Elliott, E. B. Fred, Walter S. Hunter, F. P. Keppel, L. A. Maynard; C. V. Taylor, director of survey.

Committee of apparatus makers and users.—Chairman, W. D. Collins, Chief, Division of Quality of Water, United States Geological Survey, Washington, D. C.

Committee on geophysics (acting also as the executive committee of the American Geophysical Union, which represents the American Section of the International Union of Geodesy and Geophysics).—Chairman, W. C. Lowdermilk, Assistant Chief, Soil Conservation Service, Washington, D. C.

Committee on passive protection against bombing.—Chairman, R. C. Tolman, dean of the graduate school and professor of physical chemistry and mathematical physics, California Institute of Technology, Pasadena, Calif.

Committee on war use of research facilities.—Chairman, Raymond Stevens, vice president, Arthur D. Little, Inc., Cambridge, Mass.

Ethnogeographic Board (joint board with the American Council of Learned Societies, the Social Science Research Council, and the Smithsonian Institution).—Chairman, Carl E. Guthe.

Committee on Latin American Studies (joint committee with the American Council of Learned Societies and the Social Science Research Council).—Chairman, Robert Redfield, dean of the division of the social sciences and professor of anthropology, University of Chicago, Chicago, Ill.

Committee on microcopying materials for research (joint committee with the American Council of Learned Societies and the Social Science Research Council).—Chairman, Keyes D. Metcalf, director of the university library, Harvard University, Cambridge, Mass.

REPRESENTATIVES OF THE COUNCIL ON—

Editorial board of the Proceedings of the National Academy of Sciences.—Walter H. Bucher, Leonard Carmichael, W. Mansfield Clark, W. F. Durand, Luther P. Eisenhart, Robert F. Griggs, Ross G. Harrison, Lewis H. Weed; member of the editorial executive committee, Ross G. Harrison.

Board of trustees of Science Service.—C. G. Abbot, Ross G. Harrison.

American Documentation Institute.—W. H. Kenerson.

Committee on National Roster of Scientific and Specialized Personnel of the War Manpower Commission.—J. S. Nicholas, Sterling professor of biology and fellow of Trumbull College, Yale University, New Haven, Conn.

Advisory committee of the emergency committee on aid of displaced foreign scholars.—Ross G. Harrison.

American Council of Human Relations.—Ralph Linton, professor of anthropology, Columbia University, New York City.

Joint committee on indexing and abstracting in the major fields of science, of the American Library Association.—W. H. Kenerson.

Committee Z–39 on standardization in the field of library work and documentation, of the American Standards Association.—W. H. Kenerson.

Science committee, National Resources Planning Board (joint representatives of the National Academy of Sciences and the National Research Council).—Leonard Carmichael, Arthur L. Day, Ross. G. Harrison, Dugald C. Jackson, E. B. Wilson.

Arrangements committee for the twenty-fifth session of the International Statistical Institute.—Ross G. Harrison.

Technical board of the Office of Civilian Defense.—Burnham Kelly, assistant executive officer, committee on passive protection against bombing, National Research Council, Washington, D. C.

REPRESENTATIVES OF THE FEDERAL GOVERNMENT

The President of the United States has designated the following representatives of agencies of the Government to serve as members of the National Research Council (in accordance with Executive Order No. 2859, May 11, 1918).

DEPARTMENT OF WAR

Brig. Gen. Charles C. Hillman, Chief, Professional Service Division, Office of the Surgeon General, United States Army.
Col. James S. Simmons, Chief, Preventive Medicine Division, Office of the Surgeon General, United States Army.
Brig. Gen. Gladeon M. Barnes, Office of the Chief of Ordnance, United States Army.
Maj. Gen. Dawson Olmstead, Chief Signal Officer, United States Army.
Maj. Gen. William N. Porter, Chief, Chemical Warfare Service, United States Army.

DEPARTMENT OF JUSTICE

J. Edgar Hoover, Director, Federal Bureau of Investigation.

POST OFFICE DEPARTMENT

Wrightson Chambers, Superintendent, Division of Engineering and Research.

DEPARTMENT OF THE NAVY

Rear Admiral Harold G. Bowen, Technical Aide to the Secretary, United States Navy.
Rear Admiral J. A. Furer, Coordinator of Research and Development, United States Navy.
Capt. J. F. Hellweg, Superintendent, Naval Observatory, Bureau of Navigation, United States Navy.
Capt. S. R. Shumaker, Bureau of Ordnance, United States Navy.
Capt. William Winthrop Hall, Medical Corps, United States Navy.
Rear Admiral Ben Moreell, Chief, Bureau of Yards and Docks, United States Navy.

DEPARTMENT OF THE INTERIOR

W. E. Wrather, Director, Geological Survey.
Ira N. Gabrielson, Director, Fish and Wildlife Service.

DEPARTMENT OF AGRICULTURE

——— ———, Bureau of Agricultural Chemistry and Engineering.
S. H. McCrory, in charge of the Mechanical Processing of Farm Products Research Division, Bureau of Agricultural Chemistry and Engineering.
J. R. Mohler, Chief, Bureau of Animal Industry.
P. N. Annand, Chief, Bureau of Entomology and Plant Quarantine.
E. H. Clapp, Associate Chief, Forest Service.

DEPARTMENT OF COMMERCE

Lyman J. Briggs, Director, National Bureau of Standards.
C. L. Garner, Chief, Division of Geodesy, Coast and Geodetic Survey.
Vernon I. Richard, Supervisor, Patent Office.

DEPARTMENT OF LABOR

Isador Lubin, Commissioner of Labor Statistics.

FEDERAL SECURITY AGENCY

Assistant Surgeon General R. E. Dyer, Director, National Institute of Health, Bethesda, Md.

FEDERAL WORKS AGENCY

Thomas H. MacDonald, Commissioner, Public Roads Administration.

SMITHSONIAN INSTITUTION

C. G. Abbot, Secretary, Smithsonian Institution.

B. Divisions of the Council

I. DIVISION OF FOREIGN RELATIONS

Chairman ex officio, W. B. Cannon.
Vice chairman, Harlow Shapley.
Executive committee.—Chairman, W. B. Cannon; vice chairman, Harlow Shapley; C. G. Abbot, David L. Edsall, Richard M. Field, Herbert E. Gregory.

MEMBERS OF THE DIVISION

EX OFFICIO

President of the National Academy of Sciences, Frank B. Jewett, vice president, American Telephone & Telegraph Co., 195 Broadway, New York City.
Foreign secretary of the National Academy of Sciences, W. B. Cannon, George Higginson professor of physiology, emeritus, Harvard medical school; 20 Prescott St., Cambridge, Mass.
Chairman of the National Research Council and the chairmen of all divisions of the Council.

REPRESENTATIVES OF—

American Association for the Advancement of Science

F. R. Moulton, permanent secretary, American Association for the Advancement of Science, Smithsonian Institution, Washington, D. C.

American Academy of Arts and Sciences

E. B. Wilson, professor of vital statistics, Harvard school of public health, Boston, Mass.

American Philosophical Society

Detlev W. Bronk, professor of biophysics, and director, Johnson Foundation for Research in Medical Physics, University of Pennsylvania, Philadelphia, Pa.

Department of State

Adolf A. Berle, Jr., Assistant Secretary of State, Washington, D. C.

Department of Navy

Rear Admiral J. A. Furer, Coordinator of Research and Development, Navy Department, Washington, D. C.

Department of War

Brig. Gen. Charles C. Hillman, Chief, Professional Service Division, Office of the Surgeon General, War Department, Washington, D. C.

Pan American Union

L. S. Rowe, Director General, Pan American Union, Washington, D. C.

International Astronomical Union

Joel Stebbins, ex officio, chairman, American section, International Astronomical Union; professor of astronomy and director of the Washburn Observatory, University of Wisconsin, Madison, Wis.

International Union of Biological Sciences

Elmer D. Merrill, president of the International Union; Arnold professor of botany, administrator of botanical collections, director of the Arnold arboretum, supervisor of the Bussey Institution, Harvard University, Jamaica Plain, Mass.

International Union of Geodesy and Geophysics

J. E. Church, president, section on hydrology, American Geophysical Union; meteorologist, Nevada State Agricultural Experiment Station, Reno, Nev.

Richard M. Field, past president, American Geophysical Union; associate professor of geology, Princeton University, Princeton, N. J.

John A. Fleming, general secretary, American Geophysical Union; president, Association of Terrestrial Magnetism and Electricity, International Union of Geodesy and Geophysics; director, department of terrestrial magnetism, Carnegie Institution of Washington, 5241 Broad Branch Road, Washington, D. C.

N. H. Heck president, Association of Seismology, International Union of Geodesy and Geophysics; Chief, Division of Terrestrial Magnetism and Seismology, United States Coast and Geodetic Survey, Washington, D. C.

Walter C. Lowdermilk, president, American Geophysical Union; Assistant Chief, Soil Conservation Service, Washington, D. C.

Thomas G. Thompson, professor of chemistry and director of the oceanographic laboratories, University of Washington, Seattle, Wash.

Paul C. Whitney, president, section on oceanography, American Geophysical Union; Supervisor, Southeastern Division, United States Coast and Geodetic Survey, Norfolk, Va.

International Union of Chemistry

Marston T. Bogert, president of the International Union of Chemistry; professor of chemistry, emeritus, Columbia University, New York City.

International Union of Pure and Applied Physics

L. P. Eisenhart, ex officio, chairman, division of physical sciences, National Research Council; professor of mathematics, and dean of the graduate school, Princeton University, Princeton, N. J.

International Scientific Radio Union

J. H. Dellinger, ex officio, chairman, American section of the International Scientific Radio Union; Chief of the Radio Section, National Bureau of Standards, Washington, D. C.

International Geographical Union

John K. Wright, ex officio, chairman, National Committee of the United States, International Geographical Union; Director, American Geographical Society, Broadway at One Hundred and Fifty-sixth Street, New York City.

International Bureau of Weights and Measures

Lyman J. Briggs, Director, National Bureau of Standards, Washington, D. C.

International Electrotechnical Commission

E. C. Crittenden, Chief, Electrical Division, and Assistant Director, National Bureau of Standards, Washington, D. C.

International Commission on Illumination

E. C. Crittenden, Chief, Electrical Division, and Assistant Director, National Bureau of Standards, Washington, D. C.

MEMBERS AT LARGE

C. G. Abbot, Secretary, Smithsonian Institution, Washington, D. C.

P. G. Agnew, secretary, American Standards Association, 29 West Thirty-ninth Street, New York City.

Arthur H. Compton, Charles H. Swift distinguished service professor of physics, University of Chicago, Chicago, Ill.

David L. Edsall, dean of the faculty of medicine and of the school of public health, emeritus, Harvard University; Tryon, N. C.

Herbert E. Gregory, Silliman professor of geology, emeritus, Yale University; director, emeritus, Bishop Museum of Polynesian Ethnology and Natural History, Honolulu, Hawaii.

Waldo G. Leland, director, American Council of Learned Societies, 1219 Sixteenth Street, N. W., Washington, D. C.

Harlow Shapley, professor of astronomy and director of the observatory, Harvard University, Cambridge, Mass.

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James T. Shotwell, chairman, American National Committee on International Intellectual Cooperation; professor of history, Columbia University, New York City.

Walter T. Swingle, collaborator, United States Bureau of Plant Industry, Washington, D. C.

COMMITTEES

The chairman of the division is, ex officio, a member of all committees of the division.

Committee on Pacific investigations.—Chairman, Herbert E. Gregory.

Editorial committee, Sixth Pacific Science Congress.—Chairman, Charles B. Lipman, professor of plant physiology and dean of the graduate division, University of California, Berkeley, Calif.

COMMITTEES COOPERATING WITH INTERNATIONAL COMMITTEES OF THE PACIFIC SCIENCE ASSOCIATION

American National Committee on Oceanography of the Pacific.—Chairman, Thomas G. Thompson.

American National Committee on Land Classification and Utilization in the Pacific.—Chairman, Carl O. Sauer, professor of geography, University of California, Berkeley, Calif.

American Committee on Pacific Seismology.—Chairman, James B. Macelwane, S. J., professor of geophysics and dean of the graduate school, St. Louis University, St. Louis, Mo.

REPRESENTATIVES OF THE NATIONAL RESEARCH COUNCIL ON—

Council of the Pacific Science Association.—Herbert E. Gregory.

Committee on science and its social relations, of the International Council of Scientific Unions.—Richard M. Field.

II. DIVISION OF EDUCATIONAL RELATIONS

Chairman.—William Charles White.

MEMBERS OF THE DIVISION

William Charles White, chairman of the division; chairman, medical research committee, National Tuberculosis Association; consultant pathologist, National Institute of Health, Bethesda, Md.

EX OFFICIO

Walter H. Bucher, chairman, division of geology and geography, National Research Council; professor of geology, Columbia University, New York City.

W. B. Cannon, chairman, division of foreign relations, National Research Council; George Higginson professor of physiology, emeritus, Harvard Medical School; 20 Prescott Street, Cambridge, Mass.

Leonard Carmichael, chairman, division of anthropology and psychology, National Research Council: president, Tufts College, Medford, Mass.

W. Mansfield Clark, chairman, division of chemistry and chemical technology, National Research Council; professor of physiological chemistry, school of medicine, Johns Hopkins University, Baltimore, Md.

W. F. Durand, professor of mechanical engineering, emeritus, Stanford University; chairman, division of engineering and industrial research National Research Council, Washington, D. C.

L. P. Eisenhart, chairman, division of physical sciences, National Research Council; professor of mathematics and dean of the graduate school, Princeton University, Princeton, N. J.

Robert F. Griggs, chairman, division of biology and agriculture, National Research Council; executive officer, department of botany, and chairman of the division of natural sciences, George Washington University, Washington, D. C.

Lewis H. Weed, chairman, division of medical sciences, National Research Council; professor of anatomy and director of the school of medicine, Johns Hopkins University, Baltimore, Md.

MEMBER AT LARGE

Henry A. Barton director, American Institute of Physics, 175 Fifth Avenue, New York City.

COMMITTEES

Committee on problems of deafness.—Chairman, Percival Hall, president, Columbia Institution for the Deaf, Washington, D. C.

Subcommittee on evaluation of individual hearing aids in public schools for the hearing (a joint subcommittee with the committee on scientific aids to learning):—Chairman, Arthur I. Gates, professor of education, teachers college, Columbia University, New York City.

Subcommittee on construction and installation of intelligence and achievement tests:—Chairman, ——— ———.

Subcommittee on intelligence and achievement surveys:—Chairman, Irving S. Fusfeld, dean and professor of psychology in charge of research, Gallaudet College, Washington, D. C.

Subcommittee on screening tests.—Chairman, Harold Westlake, adviser, division of special education, department of public instruction, Harrisburg, Pa.

Subcommittee on remedial measures for the prevention of deafness:—Chairman, Stacy R. Guild, associate professor of otology and director of the otological research laboratory, school of medicine, Johns Hopkins University, Baltimore, Md.

Subcommittee on psychological studies of deafness:—Chairman, Knight Dunlap, professor of psychology, University of California at Los Angeles, Los Angeles, Calif.

Subcommittee on effect of group hearing aids in a particular school for the deaf (a joint subcommittee with the committee on scientific aids to learning:—Chairman, Harvey Fletcher, acoustical research director, Bell Telephone Laboratories, Inc., 463 West Street, New York City.

III. DIVISION OF PHYSICAL SCIENCES

Chairman.—Luther P. Eisenhart.
Vice chairman.—Henry A. Barton.

Executive committee.—Chairman, Luther P. Eisenhart; vice chairman, Henry A. Barton; Raymond C. Archibald, Griffith C. Evans, R. C. Gibbs, Paul W. Merrill, Philip M. Morse, I. I. Rabi.

MEMBERS OF THE DIVISION

Luther P. Eisenhart, chairman of the division; professor of mathematics and dean of the graduate school, Princeton University, Princeton, N. J.

REPRESENTATIVES OF SOCIETIES

American Astronomical Society

Paul W. Merrill, astronomer, Mount Wilson Observatory, Pasadena, Calif.

Jan Schilt, Rutherford professor of astronomy and director of the Rutherford Observatory, Columbia University, New York City.

American Physical Society

William V. Houston, professor of physics, California Institute of Technology, Pasadena, Calif.

Philip M. Morse, associate professor of physics, Massachusetts Institute of Technology, Cambridge, Mass.

Henry D. Smyth, professor of physics and head of the department of physics, Princeton University, Princeton, N. J.

J. H. Van Vleck, professor of physics, Harvard University, Cambridge, Mass.

American Mathematical Society

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Francis D. Murnaghan, professor of mathematics, Johns Hopkins University, Baltimore, Md.

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Mathematical Association of America

Thornton C. Fry, mathematician, Bell Telephone Laboratories, Inc., 463 West Street, New York City.

Optical Society of America

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American Institute of Physics

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International Union of Pure and Applied Physics.—The division of physical sciences acts as the American section of the International Union of Pure and Applied Physics.

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T. S. Fuller, engineer of materials, General Electric Co., Schenectady, N. Y. (American Society for Testing Materials).

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Project committee on warping of concrete pavements.
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Project committee on maintenance of bituminous roads on various types of stabilized bases.
Project committee on salvaging old pavements.
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Project committee on the T and Y type of rural intersection.
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VII. Department of soils investigations.—Chairman, C. A. Hogentogler, senior highway engineer, Public Roads Administration, Washington, D. C.

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Project committee on standardization of nomenclature and definitions.
Project committee on methods of exploring, surveying, and sampling soils for highway purposes.
Project committee on methods of determining in place the physical characteristics of foundation and subgrade soils.
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Project committee on laboratory determinations of the properties of foundation soils in their natural state, and the application of test data in practice.
Project committee on methods of compaction for control and construction and their effect upon the properties of soils for highway purposes.
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Project committee on stabilized roads.

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Committee on joint research project on the durability of concrete (joint committee with the American Society for Testing Materials, and the American Concrete Institute). Chairman, ——— ———.

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Harris M. Chadwell, vice chairman of the division; head of the department of chemistry and chemical engineering, Tufts College, Medford, Mass.

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Per K. Frolich, director of Esso Laboratories, chemical division, Standard Oil Development Co., Elizabeth, N. J.

Paul M. Gross, William Howell Pegram professor of Chemistry, Duke University, Durham, N. C.

Electrochemical Society

James H. Critchett, vice president, Electro Metallurgical Co.; director of research, Union Carbide & Carbon Corporation, 30 East Forty-second Street, New York City.

American Institute of Chemical Engineers

M. E. Putnam, production manager, pharmaceutical and allied products division, Dow Chemical Co., Midland, Mich.

American Ceramic Society

George W. Morey, general manager, Parkersburg division, Corning Glass Works, Parkersburg, W. Va.

American Society for X-ray and Electron Diffraction

Sterling B. Hendricks, senior chemist, Fertilizer Research Division, United States Bureau of Plant Industry, Washington, D. C.

International Union of Chemistry

Marston T. Bogert, ex officio, president of the International Union of Chemistry; professor of chemistry, emeritus, Columbia University, New York City.

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Herbert R. Moody, professor of chemistry, emeritus, College of the City of New York; Vienna, Va.

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Laurence Irving, professor of physiology, Swarthmore College, Swarthmore, Pa.

LIAISON MEMBERS FROM THE GROUP OF DESIGNATED REPRESENTATIVES OF THE GOVERNMENT

Brig. Gen. Gladeon M. Barnes, Assistant Chief of Industrial Service Research and Engineering, Ordnance Department, War Department, Washington, D. C.

Maj. Gen. William N. Porter, Chief, Chemical Warfare Service, War Department, Washington, D. C.

Special assistant to the chairman for the Pacific coast.—Joseph B. Koepfli, research associate in chemistry, California Institute of Technology, Pasadena, Calif.

Technical aide in charge of a survey of antimalarial drugs.—Frederick Y. Wiselogle, associate in chemistry, Johns Hopkins University, Baltimore, Md.

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Committee on fundamental physical constants (joint committee with the division physical sciences).—Chairman, Lyman J. Briggs, Director, National Bureau of Standards, Washington, D. C.

Committee on low temperature scales.—Chairman, F. G. Brickwedde, Chief, Cryogenic Laboratory, National Bureau of Standards, Washington, D. C.

Committee on thermal data for chemical industries.—Chairman, F. Russell Bichowsky, visiting professor, department of chemistry, Catholic University of America, Washington, D. C.

Committee on chemical data for ceramists.—Chairman, Alexander Silverman, professor of chemistry, University of Pittsburgh, Pittsburgh, Pa.

GROUP III. COMMITTEES ON NOMENCLATURE

Committee on organic chemical nomenclature.—Chairman, Austin M. Patterson, professor of chemistry, emeritus, Antioch College; United States Office of Education, Washington, D. C.

Committee on standardization of symbols and abbreviations.—Chairman, Charles A. Marlies, assistant professor of chemical engineering, College of the City of New York, New York City.

Committee on biochemical nomenclature (to cooperate with a similar committee of the International Union of Chemistry.)—Chairman, J. Murray Luck, associate professor of biochemistry, Stanford University, Stanford University, Calif.

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Committee on cellulose and allied substances.—Chairman, Harry F. Lewis, dean, Institute of Paper Chemistry, Appleton, Wis.

Committee on the chemical utilization of coal.—Chairman, H. H. Lowry, director, coal research laboratory, Carnegie Institute of Technology, Pittsburgh, Pa.

Committee on the chemistry of proteins.—Chairman, Vincent du Vigneaud, professor of biochemistry, Cornell University Medical College, New York City.

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Mineralogical Society of America

Paul F. Kerr, professor of mineralogy, Columbia University, New York City.

Paleontological Society

G. Arthur Cooper, assistant curator, division of stratigraphic paleontology, United States National Museum, Washington, D. C.

Association of American Geographers

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Richard J. Russell, professor of geography and head of the department of geography, Louisiana State University, University, La.

American Geographical Society

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Society of Economic Geologists

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American Ceramic Society

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[1] Deceased.

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J. Harold Austin, professor of research medicine, school of medicine, University of Pennsylvania, Philadelphia, Pa.

Society of American Bacteriologists

William S. Tillett, professor of medicine, New York University, New York City.

MEMBERS AT LARGE

Alfred Blalock, professor of surgery, school of medicine, Johns Hopkins University, Baltimore, Md.

Wilburt C. Davison, first vice chairman of the division; dean, school of medicine, Duke University, Durham, N. C.

Howard T. Karsner, professor of pathology and director, institute of pathology, Western Reserve University, Cleveland, Ohio.

Robert F. Loeb, second vice chairman of the division; Lambert professor of medicine, college of physicians and surgeons, Columbia University, New York City.

T. M. Rivers, director, Hospital of the Rockefeller Institute for Medical Research, New York City.

LIAISON MEMBERS FROM THE GROUP OF DESIGNATED REPRESENTATIVES OF THE GOVERNMENT

Brig. Gen. Charles C. Hillman, Chief, Professional Service Division, Office of the Surgeon General, War Department, Washington, D. C.

Col. James S. Simmons, Chief, Preventive Medicine Division, Office of the Surgeon General, War Department, Washington, D. C.

COMMITTEES

The chairman of the division is, ex officio, a member of all committees of the division.

Advisory committee to the division.—Stanhope Bayne-Jones, Francis G. Blake, Henry A. Christian, Edmund V. Cowdry, Ludvig Hektoen, William H. Howell, Raymond Hussey, C. M. Jackson, Howard T. Karsner, Esmond R. Long, George W. McCoy, William Charles White.

Committee on American registry of pathology.—Chairman, Howard T. Karsner.

Advisory committee on drug addiction.—Chairman, William Charles White, chairman, medical research committee, National Tuberculosis Association; consultant pathologist, National Institute of Health, Bethesda, Md.

Committee on research in endocrinology: Chairman, W. B. Cannon, George Higginson professor of physiology, emeritus, Harvard medical school; 20 Prescott St., Cambridge, Mass.

Committee for research in problems of sex: Chairman, Robert M. Yerkes, professor of psychobiology, Yale University, New Haven, Conn.

ADVISORY COMMITTEES TO THE SURGEONS GENERAL OF THE WAR AND NAVY DEPARTMENTS AND THE UNITED STATES PUBLIC HEALTH SERVICE

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Brig. Gen. Charles C. Hillman, Office of the Surgeon General, War Department.
Col. James S. Simmons, Office of the Surgeon General, War Department.
Lt. Col. Roger C. Prentiss, Jr., Office of the Surgeon General, War Department.
Rear Admiral Charles S. Stephenson, Bureau of Medicine and Surgery, Navy Department.

1. *Committee on aviation medicine.*—Chairman, Eugene F. DuBois, professor of physiology, Cornell University medical college, New York City.

Advisory commission A to the committee on aviation medicine: Chairman, John K. Lewis, associate professor of medicine, school of medicine, Stanford University, San Francisco, Calif.

Subcommittee on acceleration: Chairman, Eugene M. Landis, professor of internal medicine, school of medicine, University of Virginia, Charlottesville, Va.

Subcommittee on clothing: Chairman, L. H. Newburgh, professor of clinical investigation in internal medicine, school of medicine, University of Michigan, Ann Arbor, Mich.

Subcommittee on decompression sickness: Chairman, John F. Fulton.

Subcommittee on motion sickness: Chairman, Derek Denny-Brown, director, neurological unit, Boston City Hospital, Boston, Mass.

Subcommittee on oxygen and anoxia: Chairman, Detlev W. Bronk, professor of biophysics, and director of the Eldredge R. Johnson Foundation, University of Pennsylvania, Philadelphia, Pa.

Subcommittee on visual problems: Chairman, Detlev W. Bronk.

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3. *Committee on drugs and medical supplies.*—Chairman, W. W. Palmer, Bard professor of medicine, college of physicians and surgeons, Columbia University, New York City.

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Subcommittee on hospital and surgical supplies: Chairman, Evarts A. Graham.

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Subcommittee on clinical investigation: Chairman, J. H. Means, professor of clinical medicine, Harvard medical school, Boston, Mass.

Subcommittee on infectious diseases: Chairman, Francis G. Blake, professor of medicine, Yale University medical school, New Haven, Conn.

Subcommittee on medical nutrition: Chairman, J. S. McLester, professor of medicine, school of medicine, University of Alabama, Birmingham, Ala.

Subcommittee on tropical diseases: Chairman, Henry E. Meleney, professor of preventive medicine, college of medicine, New York University, New York City.

Subcommittee on tuberculosis: Chairman, J. Burns Amberson, Jr., professor of medicine, college of physicians and surgeons, Columbia University, New York City.

Subcommittee on venereal diseases: Chairman, J. Earle Moore, associate professor of medicine, school of medicine, Johns Hopkins University, Baltimore, Md.

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Subcommittee on neurology: Chairman, Foster Kennedy, professor of clinical neurology, Cornell University medical college, New York City.

Subcommittee on personnel-training: Chairman, Harry Steckel, professor of psychiatry, school of medicine, Syracuse University, Syracuse, N. Y.

Subcommittee on psychiatry: Chairman, Arthur H. Ruggles, superintendent, Butler Hospital, Providence, R. I.

Subcommittee on war neuroses: Chairman, Tracy J. Putnam, professor of neurology and neurosurgery, college of physicians and surgeons, Columbia University, New York City.

7. Committee on sanitary engineering.—Chairman, Abel Wolman, professor of sanitary engineering, Johns Hopkins University, Baltimore, Md.

8. Committee on pathology.—Chairman, Howard T. Karsner.

9. Committee on shock and transfusions.—Chairman, Walter B. Cannon, professor of physiology, emeritus, Harvard medical school, 20 Prescott St., Cambridge, Mass.

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Subcommittee on shock: Chairman, Alfred Blalock.

10. Committee on surgery: Chairman, Evarts A. Graham, professor of surgery, school of medicine, Washington University, St. Louis, Mo.

Subcommittee on anesthesia: Chairman, Ralph M. Waters, professor of anesthesiology, school of medicine, University of Wisconsin, Madison, Wis.

Subcommittee on burns: Chairman, Allen O. Whipple, Valentine Mott professor of surgery, college of physicians and surgeons, Columbia University, New York City.

Subcommittee on neurosurgery: Chairman, Howard C. Naffziger, professor of surgery, school of medicine, University of California, San Francisco, Calif.

Subcommittee on ophthalmology: Chairman, Harry S. Gradle, professor of ophthalmology, Northwestern University school of medicine, Chicago, Ill.

Subcommittee on orthopedic surgery: Chairman, George E. Bennett, associate professor of orthopedic surgery, school of Medicine, Johns Hopkins University, Baltimore, Md.

Subcommittee on physical therapy: Chairman, John S. Coulter, associate professor of physical therapy, school of medicine, Northwestern University, Chicago, Ill.

Subcommittee on plastic and maxillo-facial surgery: Chairman, Robert H. Ivy, professor of maxillo-facial surgery, school of medicine, University of Pennsylvania, Philadelphia, Pa.

Subcommittee on radiology: Chairman, A. C. Christie, professor of clinical radiology, school of medicine, Georgetown University, Washington, D. C.

Subcommittee on surgical infections: Chairman, Frank L. Meleney, associate professor of clinical surgery, college of physicians and surgeons, Columbia University, New York City.

Subcommittee on thoracic surgery: Chairman, Evarts A. Graham.

Subcommittee on urology: Chairman, Herman L. Kretschmer, professor of surgery (genito-urinary), Rush Medical College, Chicago, Ill.

Subcommittee on vascular injuries: Chairman, John Homans, professor of clinical surgery, Harvard medical school, Boston, Mass.

11. Committee on treatment of gas casualties.—Chairman, Milton C. Winternitz, Anthony N. Brady professor of pathology, school of medicine, Yale University, New Haven, Conn.

12. Committee on information.—Chairman, Morris Fishbein, assistant clinical professor of medicine, Rush Medical College; editor, Journal of the American Medical Association, 535 North Dearborn Street, Chicago, Ill.:

Subcommittee on historical records: Chairman, John F. Fulton, Sterling professor of physiology, school of medicine, Yale University, New Haven, Conn.

Subcommittee on publicity: Chairman, Morris Fishbein.

VIII. DIVISION OF BIOLOGY AND AGRICULTURE

Chairman.—Robert F. Griggs.
Vice chairman.—L. A. Maynard.
Executive secretary.—Douglas M. Whitaker.
Executive committee.—Chairman, Robert F. Griggs; vice chairman, L. A. Maynard; D. E. Minnich, Nathan R. Smith.

Members of the Division

Robert F. Griggs, chairman of the division; executive officer, department of botany, and chairman of the division of natural sciences, George Washington University, Washington, D. C.

Representatives of societies

American Association of Economic Entomologists

C. E. Palm, professor of entomology, Cornell University, Ithaca, N. Y.

American Dairy Science Association

O. E. Reed, Chief, Bureau of Dairy Industry, United States Department of Agriculture, Washington, D. C.

American Genetic Association

Marcus Rhoades, associate professor of botany, Columbia University, New York City.

American Institute of Nutrition

L. A. Maynard, vice chairman of the division; director, school of nutrition and professor of animal nutrition, Cornell University, Ithaca, N. Y.

American Physiological Society

McKeen Cattell, associate professor of pharmacology, Cornell University medical college, New York City.

American Phytopathological Society

H. P. Barss, principal botanist, Office of Experiment Stations, United States Department of Agriculture, Washington, D. C.

American Society of Agronomy

R. M. Salter, Chief, Bureau of Plant Industry, United States Department of Agriculture, Washington, D. C.

American Society of Animal Production

H. W. Marston, senior animal husbandman, Office of Experiment Stations, United States Department of Agriculture, Washington, D. C.

American Society of Biological Chemists

Colonel Paul E. Howe, Food and Nutrition Subdivision, Professional Service Division, Office of the Surgeon General, United States Army, Washington, D. C.

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American Society for Horticultural Science

E. C. Auchter, Administrator, Agricultural Research Administration, United States Department of Agriculture, Washington, D. C.

American Society of Mammalogists

Remington Kellogg, Assistant Curator, Division of Mammals, Smithsonian Institution, Washington, D. C.

American Society of Parasitologists

W. W. Cort, professor of helminthology, school of hygiene and public health, Johns Hopkins University, Baltimore, Md.
Willard H. Wright, senior zoologist, National Institute of Health, Bethesda, Md.

American Society of Plant Physiologists

F. P. Cullinan, Senior Pomologist, Division of Fruit and Vegetable Crops and Diseases, Beltsville Research Center, United States Department of Agriculture, Beltsville, Md.

American Veterinary Medical Association

H. H. Dukes, professor of veterinary physiology, New York State veterinary college, Cornell University, Ithaca, N. Y.

American Society of Zoologists

D. E. Minnich, professor of zoology, University of Minnesota, Minneapolis, Minn.

Botanical Society of America

Arthur J. Eames, professor of botany, Cornell University, Ithaca, N. Y.

Ecological Society of America

Ira N. Gabrielson, Chief, Fish and Wildlife Service, United States Department of the Interior, Washington, D. C.

Entomological Society of America

E. O. Essig, professor of entomology, University of California, Berkeley, Calif.

Genetics Society of America

Merle T. Jenkins, principal agronomist in charge of corn investigation, United States Bureau of Plant Industry, Washington, D. C.

Limnological Society of America

Chancey Juday, professor of limnology and director of the limnological laboratory, University of Wisconsin, Madison, Wis.

Mycological Society of America

F. A. Wolf, professor of botany, Duke University, Durham, N. C.

Poultry Science Association

M. A. Jull, professor of animal husbandry, University of Maryland, College Park, Md.

Society of American Bacteriologists

Nathan R. Smith, senior bacteriologist, Bureau of Plant Industry, United States Department of Agriculture, Washington, D. C.

Society of American Foresters

C. F. Korstian, dean of the school of forestry, Duke University, Durham, N. C.

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R. E. Coker, professor of zoology, and chairman of the division of natural sciences, University of North Carolina, Chapel Hill, N. C.

A. C. Redfield, professor of physiology and tutor in the department of biology, Harvard University, Cambridge, Mass.

E. W. Sinnott, Sterling professor of botany, and director, Osborn botanical laboratory, Yale University, New Haven, Conn.

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P. N. Annand, Chief, Bureau of Entomology and Plant Quarantine, United States Department of Agriculture, Washington, D. C.

E. H. Clapp, Associate Chief, Forest Service, United States Department of Agriculture, Washington, D. C.

Ira N. Gabrielson, Director, Fish and Wildlife Service, United States Department of the Interior, Washington, D. C.

J. R. Mohler, Chief, Bureau of Animal Industry, United States Department of Agriculture, Washington, D. C.

COMMITTEES

The chairman of the division is, ex officio, a member of all committees of the division.

Advisory committee to the division.—C. E. Allen, R. E. Coker, L. J. Cole, William Crocker, W. C. Curtis, B. M. Duggar, R. A. Harper, L. R. Jones, I. F. Lewis, Frank R. Lillie, C. E. McClung, Fernandus Payne, Lorande L. Woodruff, A. F. Woods.

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Committee on diagnosis and pathology of nutritional deficiencies.—Chairman, H. D. Kruse, research division, Milbank Memorial Fund, 40 Wall Street, New York City.

Committee on dietary allowances.—Chairman, Lydia J. Roberts, professor of nutrition and chairman of the department of home economics and household administration, University of Chicago, Chicago, Ill.

Committee on fats.—Chairman, L. A. Maynard.

Committee on food composition.—Chairman, C. A. Elvehjem, professor of biochemistry, University of Wisconsin, Madison, Wis.

Committee on medical nutrition (this is also a subcommittee of the division of medical sciences).—Chairman, James S. McLester, professor of medicine, school of medicine, University of Alabama, Birmingham, Ala.

Committee on milk.—Chairman, L. A. Maynard.

Committee on nutritional aspects of ageing.—Chairman, Russell M. Wilder, professor of medicine, graduate school of medicine, University of Minnesota, Mayo Clinic, Rochester, Minn.

Committee on nutrition in industry.—Chairman, Frank G. Boudreau.

Committee on procurement.—Chairman, C. G. King, scientific director, Nutrition Foundation, Inc., Chrysler Building, New York City.

Committee on protein foods.—Chairman, W. C. Rose, professor of biochemistry, University of Illinois, Urbana Ill.

Committee on research personnel.—Chairman, C. A. Elvehjem.

Committee on vegetables and fruits.—Chairman, L. A. Maynard.

Committee on wartime diet.—Chairman, H. C. Sherman, Mitchill professor of chemistry, Columbia University, New York City.

OTHER COMMITTEES OF THE DIVISION

Committee on fellowships.—Chairman, Robert F. Griggs.

Committee on aërobiology.—Chairman, E. C. Stakman, professor of plant pathology, University of Minnesota, University Farm, St. Paul, Minn.

Committee on animal health.—Chairman, G. H. Hart, professor of animal husbandry, University of California, Davis, Calif.

Committee on animal nutrition.—Chairman, L. A. Maynard.

Committee on applications of the electron microscope.—Chairman, Stuart Mudd.

Committee on biological processes of ageing.—Chairman, A. J. Carlson, Frank P. Hixon distinguished service professor of physiology, emeritus, University of Chicago, Chicago, Ill.

Committee on crop protection.—Chairman, E. C. Stakman.

Committee on the ecology of animal populations.—Chairman, W. C. Allee, professor of zoology, University of Chicago, Chicago, Ill.

Committee on Forestry (joint committee with the Society of American Foresters).—Chairman, Henry S. Graves, dean of the school of forestry and Sterling professor of forestry, emeritus, Yale University, New Haven, Conn.

Committee on genetics of pathogenic organisms.—Chairman, E. C. Stakman.

Committee on human heredity.—Chairman, Laurence H. Snyder, professor of zoology and chairman of the department of zoology and entomology, Ohio State University, Columbus, Ohio.

Committee on the maintenance of pure genetic strains.—Chairman, Leslie T. Webster, member, Rockefeller Institute for Medical Research, Sixty-sixth Street and York Avenue, New York City.

Committee on National Livestock and Meat Board grants.—Chairman, Colonel Paul E. Howe.

Committee on preservation of natural conditions.—Chairman, H. E. Anthony, curator of mammalogy, American Museum of Natural History, New York City.

Committee on wartime modification of the curriculum in biology.—Chairman, Ernest L. Stover, professor of botany, Eastern Illinois State Teachers College, Charleston, Ill.

American section, International Union of Biological Sciences.—The division of biology and agriculture acts as the American section of the International Union of Biological Sciences.

REPRESENTATIVES OF THE DIVISION ON—

Board of trustees of Biological Abstracts

A. F. Blakeslee, A. J. Carlson, H. B. Goodrich, D. D. Irish.

Institute for Research in Tropical America

Robert F. Griggs, ex officio.

Board of Governors, Crop Protection Institute

Harold T. Cook.

IX. DIVISION OF ANTHROPOLOGY AND PSYCHOLOGY

Chairman.—Leonard Carmichael.

Vice chairman.—F. M. Setzler,

Executive committee.—Chairman, Leonard Carmichael; vice chairman, F. M. Setzler; Henry E. Garrett, Ralph Linton.

MEMBERS OF THE DIVISION

REPRESENTATIVES OF SOCIETIES

American Anthropological Association

C. S. Coon, associate professor of anthropology and assistant curator of Old World ethnology, Harvard University, Cambridge, Mass.

D. S. Davidson, assistant professor of anthropology, University of Pennsylvania, Philadelphia, Pa.

Fred Eggan, assistant professor of anthropology, University of Chicago, Chicago, Ill.

Carl E. Guthe, director of university museums, and director of the museum of anthropology, University of Michigan, Ann Arbor, Mich.

Clyde H. M. Kluckhohn, associate professor of anthropology, Harvard University, Cambridge, Mass.

George P. Murdock, professor of anthropology, Yale University, New Haven, Conn.

R. L. Olson, associate professor of anthropology, University of California, Berkeley, Calif.

F. M. Setzler, vice chairman of the division; head curator, Department of Anthropology, United States National Museum, Washington, D. C.

M. W. Stirling, Chief, United States Bureau of American Ethnology, Smithsonian Institution, Washington, D. C.

American Psychological Association

Gordon W. Allport, associate professor of psychology, Harvard University, Cambridge, Mass.

Elmer K. Culler, professor of psychology and director of the psychological laboratory, University of Rochester, Rochester, N. Y.

Karl M. Dallenbach, professor of psychology, Cornell University, Ithaca, N. Y.

Joy P. Guilford, professor of psychology, University of Southern California, Los Angeles, Calif.

Edwin R. Guthrie, professor of psychology, University of Washington, Seattle, Wash.

Harold E. Jones, professor of psychology and director of the institute of child welfare, University of California, Berkeley, Calif.

Norman R. F. Maier, associate professor of psychology, University of Michigan, Ann Arbor, Mich.

K. F. Muenzinger, professor of psychology, University of Colorado, Boulder, Colo.

Dael L. Wolfle, assistant professor of psychology, University of Chicago, Chicago, Ill.

MEMBERS AT LARGE

Leonard Carmichael, chairman of the division; president, Tufts College, Medford, Mass.

Fay-Cooper Cole, professor of anthropology, University of Chicago, Chicago, Ill.

Henry E. Garrett, associate professor of psychology, Columbia University, New York City.

Ralph Linton, professor of anthropology, Columbia University, New York City.

COMMITTEES

The chairman of the division is, ex officio, a member of all committees of the division.

Committee on classification of military personnel advisory to the Adjutant General's Office.—Chairman, Walter V. Bingham, Personnel Research Section, War Department, Washington, D. C.

Committee on African anthropology.—Chairman, M. J. Herskovits, professor of anthropology, Northwestern University, Evanston, Ill.

Committee on the anthropology of Oceania.—Chairman, George P. Murdock.

Committee on basic needs in American archaeology.—Chairman, W. Duncan Strong, associate professor of anthropology, and director of the archaeological laboratory, Columbia University, New York City.

Committee on child development.—Chairman, R. S. Woodworth, professor of psychology, Columbia University, New York City.

Emergency committee in psychology.—Chairman, Karl M. Dallenbach, professor of psychology, Cornell University, Ithaca, N. Y.

Office of psychological personnel: Executive director, Steuart H. Britt, National Research Council, Washington, D. C.

Subcommittee on learning and training: Chairman, M. R. Trabue, dean, college of education, Pennsylvania State College, State College, Pa.

Subcommittee on listing of personnel in psychology: Chairman, Steuart H. Britt.

Subcommittee on perceptual problems: Chairman, E. G. Wever, professor of psychology, Princeton University, Princeton, N. J.

Subcommittee on problems of mental deficiency: Chairman, E. A. Doll, director of research, Training School, Vineland, N. J.

Subcommittee on psychological aspects of readjustment: Chairman, H. E. Burtt, professor of psychology, Ohio State University, Columbus, Ohio.

Subcommittee on services of women psychologists in the emergency: Chairman, Ruth S. Tolman, technical assistant, United States Department of Agriculture, Washington, D. C.

Subcommittee on survey and planning: Chairman, Robert M. Yerkes, professor of psychobiology, Yale University, New Haven, Conn.

Subcommittee on a textbook on military psychology: Chairman, Edwin G. Boring, professor of psychology, Harvard University, Cambridge, Mass.

Committee on fellowships.—Chairman, Leonard Carmichael.

Committee on food habits.—Chairman, Carl E. Guthe.

Committee on Latin-American anthropology.—Chairman, Wendell C. Bennett.

Committee on Latin-American psychology.—Chairman, J. G. Beebe-Center, lecturer in psychology, Harvard University, Cambridge, Mass.

Committee on problems of neurotic behavior.—Chairman, Walter R. Miles, professor of psychology, school of medicine, Yale University, New Haven, Conn.

Subcommittee on personality inventory: Chairman, Carney Landis, associate professor of psychology, Columbia University; principal research psychologist, New York State Psychiatric Institute and Hospital, New York City.

Committee on selection and training of aircraft pilots.—Chairman, Morris S. Viteles, professor of psychology, University of Pennsylvania, Philadelphia, Pa.

Committee on service personnel—selection and training.—Chairman, John M. Stalnaker, consultant, college entrance examination board, Princeton, N. J.

Subcommittee on oscilloscope operators: Chairman, George K. Bennett, Psychological Corporation, 522 Fifth Avenue, New York City.

Subcommittee on procedures: Chairman, John M. Stalnaker.

Committee on a survey of South American Indians.—Chairman, John M. Cooper, professor of anthropology, Catholic University of America, Washington, D. C.

Committee on war service of anthropologists.—Chairman, Ralph L. Beals, assistant professor of anthropology, University of California at Los Angeles, Los Angeles, Calif.

REPRESENTATIVES OF THE DIVISION ON—

Policy board of the National Indian Institute

John M. Cooper.

Technical Board of the Occupational Analysis Section, United States Employment Service

Paul S. Achilles, W. V. Bingham, Clark L. Hull, F. S. Keller, L. J. O'Rourke, Donald G. Paterson, A. T. Poffenberger, Morris S. Viteles.

5. NATIONAL RESEARCH FELLOWSHIPS

The National Research Council has been entrusted by the Rockefeller Foundation with appropriations to provide for a limited number of postdoctorate fellowships for the purpose of promoting fundamental research in science, primarily in educational and research institutions of the United States. These fellowships are awarded to persons who have demonstrated a high order of ability in research for the purpose of enabling them to obtain additional experience in research at institutions which make adequate provision for effective prosecution of research. Applicants are eligible for appointment who are citizens of the United States or of Canada and, as a rule, who are under 35 years of age and have fulfilled all requirements for the doctor's degree not later than the close of the calendar year in which their applications are filed, or who have had training equivalent to that represented by the doctor's degree. The minimum stipend for these fellowships is $1,800 per year. Under special conditions fellows may be appointed for study abroad.

In addition to fellowships in the general fields of medicine, maintained by the Rockefeller Foundation, the Council also administers fellowships for the study of the filtrable viruses and for investigations in the basic fields related to orthopedic surgery, supported by the National Foundation for Infantile Paralysis, Inc.

A special series of medical fellowships supported by a grant from the Rockefeller Foundation, and known as the Welch Fellowships in Internal Medicine, is also awarded to physicians under 40 years of age who are citizens of the United States and who have demonstrated unusual aptitude and promise of achievement in internal medicine, teaching, and investigation. These fellowships are designed to provide an opportunity for a prolonged period of advanced training in the field of internal medicine. This training may include study and investigation in the basic medical sciences as well as clinical experience, teaching, and research.

Natural Sciences

Fellowships in the following subjects are administered by the National Research Fellowship Board in the Natural Sciences: Physics, astronomy, chemistry, mathematics, geology, paleontology, physical geography, botany, zoology, agriculture, forestry, anthropology, and psychology.

When requested to do so, the board is ready to consider entering into cooperation with universities in the support of participating fellowships by providing a part-time research fellowship in connection with a part-time university instructorship.

Members of the Board

Ross G. Harrison, ex officio, chairman of the National Research Council; Sterling professor of biology, emeritus, Yale University, New Haven, Conn. Secretary.

Isaiah Bowman, president, Johns Hopkins University, Baltimore, Md.

M. H. Jacobs, professor of general physiology, school of medicine, University of Pennsylvania, Philadelphia, Pa.

Frank B. Jewett, ex officio, president, National Academy of Sciences; vice president, American Telephone & Telegraph Co., 195 Broadway, New York City.

Duncan A. MacInnes, member, Rockefeller Institute for Medical Research, Sixty-sixth Street and York Avenue, New York City.

John C. Slater, professor of physics, in charge of the department, Massachusetts Institute of Technology, Cambridge, Mass.

Fellowships for 1942–43 have been awarded to the following persons:

In Physics and Astronomy

William A. Hiltner
Myron H. Nichols*
Alvin H. Nielsen*
George E. Valley, Jr.*
Harold F. Weaver
Alvin M. Weinberg*
Frank B. Wood*

In Mathematics

Howard Levi*
Harry T. Muhly*
Claude E. Shannon*
Luther I. Wade, Jr.

In Chemistry

Elkan R. Blout
Stuart R. Brinkley, Jr.
Richard W. Dodson*
Harry E. Gunning
Julius D. Heldman
Hugh M. Hulburt
Nathan Kornblum
Foil A. Miller

In Geology

John N. Adkins*
Elizabeth J. Armstrong
Hubert K. Stephensen*

In Zoology

Roland H. Alden*
Thomas H. Allen*
Victor A. Drill
Daniel L. Harris
Charles D. Michener*

In Botany

Harry G. Albaum
Robert T. Brumfield
Byron R. Houston
Herschel Roman*
Arnold H. Sparrow
Roger Y. Stanier*
Alma J. Wiffen

In Anthropology

Francis E. Randall*

In Psychology

John W. French*
Merle Lawrence*
Joseph C. R. Licklider*

*Withdrawn because of war activity.

Medical Sciences

The fellowships in the medical sciences, including those relating to the filtrable viruses and orthopedic surgery, are administered by the Medical Fellowship Board.

Members of the Board

Francis G. Blake, chairman, dean and Sterling professor of medicine, school of medicine, Yale University; physician in chief, New Haven Hospital, New Haven, Conn.

Alfred Blalock, professor of surgery, school of medicine, Johns Hopkins University, Baltimore, Md.

Paul R. Cannon, professor of pathology, University of Chicago, Chicago, Ill.

A. Baird Hastings, Hamilton Kuhn professor of biochemistry, Harvard medical school, Boston, Mass.

Homer W. Smith, professor of physiology and director of the physiological laboratories, New York University college of medicine, New York City.

Lewis H. Weed, ex officio, chairman, division of medical sciences, National Research Council; professor of anatomy, and director of the school of medicine, Johns Hopkins University, Baltimore, Md.

Additional members for the consideration of the Welch fellowships in internal medicine

Robert F. Loeb, Lambert professor of medicine, college of physicians and surgeons, Columbia University, New York City.

T. Grier Miller, professor of clinical medicine, school of medicine, University of Pennsylvania, Philadelphia, Pa.

John B. Youmans, associate professor of medicine and director of postgraduate instruction, school of medicine, Vanderbilt University, Nashville, Tenn.

Fellowships for 1942–43 have been awarded to the following persons:

In fields of general medicine

William R. Arrowsmith*
David L. Bassett
L. Royal Christensen
Sidney P. Colowick *
Frank L. Engel
Henry D. Hoberman
Seymour S. Kety
Henry D. Lauson*
Maclyn McCarty*
Joseph Post*
L. James Talbot
Howard F. Wilkins*
James G. Wilson*
George G. Wright, Jr.

In virus research

Seymour S. Cohen*
H. Chandler Elliott
Charles A. Evans*
Robert H. Green*
John L. Peck, Jr.
Jonas E. Salk
John Spizizen*
Joel Warren*

In orthopedic surgery

Harold W. Bischoff*
William R. Duncan
Maxwell F. Kepl
Paul S. Rubin
Louis J. Strobino*
C. Laird Wilson*

Welch fellowship in internal medicine

A. McGehee Harvey (Deferred)

*Withdrawn because of war activity.

6. MEMBERS OF THE NATIONAL RESEARCH COUNCIL, 1942–43

Abbot, C. G., Smithsonian Institution, Washington, D. C.
Adams, C. A., Edward G. Budd Manufacturing Co., Philadelphia, Pa.
Agnew, P. G., American Standards Association, 29 West 39th St., New York City.
Allport, Gordon W., Harvard University, Cambridge, Mass.
Annand, P. N., United States Bureau of Entomology and Plant Quarantine, Washington, D. C.
Archibald, R. C., Brown University, Providence, R. I.
Auchter, E. C., United States Bureau of Plant Industry, Washington, D. C.
Austin, J. Harold, school of medicine, University of Pennsylvania, Philadelphia. Pa.
Bailey, E. G., Babcock & Wilcox Co., New York City.
Barnes, Brigadier General Gladeon M., Office of the Chief of Ordnance, War Department, Washington, D. C.
Barss, H. P., Office of Experiment Stations, United States Department of Agriculture, Washington, D. C.
Bartlett, Paul D., Harvard University, Cambridge, Mass.
Barton, Henry A., American Institute of Physics, New York City.
Bass, Lawrence W., New England Industrial Research Foundation, Boston, Mass.
Berle, Adolf A., Jr., Department of State, Washington, D. C.
Birkhoff, George D., Harvard University, Cambridge, Mass.
Blalock, Alfred, school of medicine, Johns Hopkins University, Baltimore, Md.
Boardman, H. C., Chicago Bridge & Iron Co., Chicago, Ill.
Bogert, Marston T., Columbia University, New York City.
Bordley, James III, school of medicine, Johns Hopkins University, Baltimore, Md.
Bowen, Rear Admiral Harold G., Office of the Secretary of the Navy, Washington, D. C.
Bowen, Isaiah, Johns Hopkins University, Baltimore, Md.
Bradley, Wilmot H., United States Geological Survey, Washington, D. C.
Breer, Carl, Chrysler Corporation, Detroit, Mich.
Briggs, Lyman J., National Bureau of Standards, Washington, D. C.
Bronk, Detlev W., Johnson Foundation for Medical Physics, University of Pennsylvania, Philadelphia, Pa.
Brown, Ralph H., University of Minnesota, Minneapolis, Minn.
Bucher, Walter H., Columbia University, New York City.
Buckley, Oliver E., Bell Telephone Laboratories, Inc., New York City.
Burbank, W. S., United States Geological Survey, Washington, D. C.
Bush, Vannevar, Carnegie Institution of Washington, Washington, D. C
Caldwell, F. W., United Aircraft Corporation, East Hartford, Conn.
Cannon, Walter B., 20 Prescott St., Cambridge, Mass.
Carmichael, Leonard, Tufts College, Medford, Mass.
Cates, Louis S., Phelps Dodge Corporation, New York City.
Cattell, McKeen, Cornell University Medical School, New York City.
Chadwell, Harris M., Tufts College, Medford, Mass.
Chambers, Wrightson, United States Post Office Department, Washington, D. C.
Church, J. E., State Agricultural Experiment Station, Reno, Nev.
Clapp, E. H., United States Forest Service, Washington, D. C.
Clark, Eliot R., school of medicine, University of Pennsylvania, Philadelphia, Pa.
Clark, W. Mansfield, school of medicine, Johns Hopkins University, Baltimore, Md.
Coker, R. E., University of North Carolina, Chapel Hill, N. C.
Cole, Fay-Cooper, University of Chicago, Chicago, Ill.
Compton, Arthur H., University of Chicago, Chicago, Ill.
Compton, Karl T., Massachusetts Institute of Technology, Cambridge, Mass.
Conant, James B., Harvard University, Cambridge, Mass.
Conklin, E. G., American Philosophical Society, Philadelphia, Pa.
Coon, C. S., Harvard University, Cambridge, Mass.
Cooper, G. Arthur, United States National Museum, Washington, D. C.
Cort, W. W., school of hygiene and public health, Johns Hopkins University, Baltimore, Md.
Cottrell, F. G., 3904 Ingomar Street N. W., Washington, D. C.
Dallenbach, K. M., Cornell University, Ithaca, N. Y
Davidson, D. S., University of Pennsylvania, Philadelphia, Pa.
Davison, Wilburt C., Duke University, Durham, N. C.
Dellinger, J. H., National Bureau of Standards, Washington, D. C.
Dukes, H. H., State Veterinary College, Cornell University, Ithaca, N. Y.
Durand, W. F., National Research Council, Washington, D. C.

Eames, Arthur J., Cornell University, Ithaca, N. Y.
Edsall, David L., Tyron, N. C.
Eggan, Fred, University of Chicago, Chicago, Ill.
Eichhorn, Adolph, animal disease station, National Research Center, Beltsville, Md.
Eisenhart, Luther P., Princeton University, Princeton, N. J.
Esselen, Gustavus J., Gustavus J. Esselen, Inc., Boston, Mass.
Essig, E. O., University of California, Berkeley, Calif.
Evans, Griffith C., University of California, Berkeley, Calif.
Faust, Ernest C., school of medicine, Tulane University, New Orleans, La.
Field, Richard M., Princeton University, Princeton, N. J.
Fink, Colin G., Columbia University, New York City.
Firor, Warfield M., school of medicine, Johns Hopkins University, Baltimore, Md.
Fleming, John A., Department of Terrestrial Magnetism, Carnegie Institution of Washington, Washington, D. C.
Fletcher, Harvey, Bell Telephone Laboratories, Inc., New York City.
Fowler, Frederick A., 1727 Massachusetts Ave., Washington, D. C.
Frolich, Per K., Standard Oil Development Co., Elizabeth, N. J.
Fry, Thornton C., Bell Telephone Laboratories, Inc., New York City.
Fuller, T. S., General Electric Co., Schenectady, N. Y.
Fulton, John F., school of medicine, Yale University, New Haven, Conn.
Furer, Rear Admiral J. A., Office of the Secretary of the Navy, Washington, D. C.
Gabrielson, Ira N., Fish and Wildlife Service, Washington, D. C.
Garner, C. L., United States Coast and Geodetic Survey, Washington, D. C.
Garrett, Henry E., Columbia University, New York City.
Gibbs, R. C., Cornell University, Ithaca, N. Y.
Graham, Evarts A., school of medicine, Washington University, St. Louis, Mo.
Greene, Arthur M., Jr., Princeton University, Princeton. N. J.
Griggs, Robert F., George Washington University, Washington, D. C.
Gross, Paul M., Duke University, Durham, N. C.
Guilford, Joy P., University of Southern California, Los Angeles, Calif.
Guthe, Carl E., University of Michigan, Ann Arbor, Mich.
Guthrie, Edwin R., University of Washington, Seattle, Wash.
Harrison, Ross G., Yale University, New Haven, Conn.
Hartshorne, Richard, University of Wisconsin, Madison, Wis.
Hastings, A. Baird, Harvard Medical School, Boston, Mass.
Heck, Captain N. H., United States Coast and Geodetic Survey, Washington, D. C.
Hellweg, Captain J. F., United States Naval Observatory, Washington, D. C.
Hillman, Brigadier General Charles C., Office of the Surgeon General, War Department, Washington, D. C.
Holland, Maurice, 40 West Fortieth Street, New York City.
Hoover, J. Edgar, Federal Bureau of Investigation, Washington, D. C.
Houston, W. V., California Institute of Technology, Pasadena, Calif.
Howe, Colonel Paul E., Office of the Surgeon General, War Department, Washington, D. C.
Hull, A. W., General Electric Co., Schenectady, N. Y.
Hunsaker, Jerome C., Massachusetts Institute of Technology, Cambridge, Mass.
Irving, Laurence, Swarthmore College, Swarthmore, Pa.
James, W. S., Studebaker Corporation, South Bend, Ind.
Jeffries, Zay, General Electric Co., Nela Park, Cleveland, Ohio.
Jenkins, Merle T., United States Bureau of Plant Industry, Washington, D. C.
Jewett, Frank B., American Telephone & Telegraph Co., New York City.
Johnston, John, United States Steel Corporation, Kearny, N. J.
Jones, Harold E., University of California, Berkeley, Calif.
Juday, Chauncey, University of Wisconsin, Madison, Wis.
Jull, M. A., University of Maryland, College Park, Md.
Karsner, Howard T., Western Reserve University, Cleveland, Ohio.
Kellogg, Remington, Smithsonian Institution, Washington, D. C.
Kerr, Paul F., Columbia University, New York City.
Kluckhohn, Clyde H. M., Harvard University, Cambridge, Mass.
Knudsen, Vern O., University of California at Los Angeles, Los Angeles, Calif.
Kornblum, Karl, Jefferson Medical College, Philadelphia, Pa.
Korstian, C. F., Duke University, Durham, N. C.
Lawrence, Ernest O., University of California, Berkeley, Calif.
Lee, Roger I., Harvard Medical School, Boston, Mass.
Leland, Waldo G., American Council of Learned Societies, Washington, D. C.
Levorsen, A. I., Tulsa, Okla.

Lewis, W. K., Massachusetts Institute of Technology, Cambridge, Mass.
Linton, Ralph, Columbia University, New York City.
Loeb, Robert F., College of Physicians and Surgeons, Columbia University, New York City.
Long, Esmond R., Henry Phipps Institute, University of Pennsylvania, Philadelphia, Pa.
Lovering, T. S., University of Michigan, Ann Arbor, Mich.
Lowdermilk, W. C., Soil Conservation Service, Washington, D. C.
Lubin, Isador, United States Bureau of Labor Statistics, Washington, D. C.
Lukens, Francis D. W., Maloney Clinic, University of Pennsylvania, Philadelphia, Pa.
MacDonald, Thomas H., United States Public Roads Administration, Washington, D. C.
Maier, Norman R. F., University of Michigan, Ann Arbor, Mich.
Marshall, E. K., Jr., school of medicine, Johns Hopkins University, Baltimore, Md.
Marston, H. W., Office of Experiment Stations, United States Department of Agriculture, Washington, D. C.
Maynard, L. A., Cornell University, Ithaca, N. Y.
McCrory, S. H., United States Bureau of Chemistry and Agricultural Engineering, Washington, D. C.
McCutcheon, Morton, school of medicine, University of Pennsylvania, Philadelphia, Pa.
Mendenhall, W. C., United States Geological Survey, Washington, D. C.
Merica, Paul D., International Nickel Co., New York City.
Merrill, Elmer D., Arnold Arboretum, Harvard University, Jamaica Plain, Mass.
Merrill, Paul W., Mount Wilson Observatory, Pasadena, Calif.
Metten, John F., New York Shipbuilding Corporation, Camden, N. J.
Miles, Walter R., school of medicine, Yale University, New Haven, Conn.
Milliken, R. A., California Institute of Technology, Pasadena, Calif.
Minnich, D. E., University of Minnesota, Minneapolis, Minn.
Mohler, J. R., United States Bureau of Animal Industry, Washington, D. C.
Moody, Herbert R., Vienna, Va.
Moreell, Rear Admiral Ben, Bureau of Yards and Docks, Navy Department, Washington, D. C.
Morey, George W., Corning Glass Works, Parkersburg, W. Va.
Simmons, Colonel James S., Office of the Surgeon General, War Department, Washington, D. C.
Singewald, Joseph T., Jr., Johns Hopkins University, Baltimore, Md.
Sinnott, E. W., Yale University, New Haven, Conn.
Slepian, Joseph, Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa.
Smith, Nathan R., United States Bureau of Plant Industry, Washington, D. C.
Smyth, Henry D., Princeton University, Princeton, N. J.
Sorensen, R. W., California Institute of Technology, Pasadena, Calif.
Stanley, W. M., Rockefeller Institute for Medical Research, Princeton, N. J.
Stebbins, Joel, Washburn Observatory, University of Wisconsin, Madison, Wis.
Stephenson, Rear Admiral Charles S., Bureau of Medicine and Surgery, Navy Department, Washington, D. C.
Stevens, Raymond, Arthur D. Little, Inc., Cambridge, Mass.
Stirling, M. W., Bureau of American Ethnology, Washington, D. C.
Stone, M. H., Harvard University, Cambridge, Mass.
Swingle, Walter T., United States Bureau of Plant Industry, Washington, D. C.
Thompson, Thomas G., University of Washington, Seattle, Wash.
Tillett, William S., school of medicine, New York University, New York City.
Van Vleck, John H., Harvard University, Cambridge, Mass.
von Karman, Theodore, California Institute of Technology, Pasadena, Calif.
Watson, F. R., 1504 South Milan Avenue, South Pasadena, Calif.
Weed, Lewis H., school of medicine, Johns Hopkins University, Baltimore, Md.
Weidlein, Edward R., Mellon Institute of Industrial Research, Pittsburgh, Pa.
White, William Charles, National Institute of Health, Bethesda, Md.
Whitehead, John B., Johns Hopkins University, Baltimore, Md.
Whitney, P. C., United States Coast and Geodetic Survey, Norfolk, Va.
Willard, Frederic W., Nassau Smelting & Refining Co., New York City
Wolf, F. A., Duke University, Durham, N. C
Wolfle, Dael L., University of Chicago, Chicago, Ill.
Wright, F. E., 2134 Wyoming Avenue, Washington, D. C.
Wright, John K., American Geographical Society, New York City.
Wright, Theodore P., War Production Board, Washington, D. C.
Wright, Willard H., National Institute of Health, Bethesda, Md.

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